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EARLY TREATMENT OF ABDOMINAL GUNSHOT WOUNDS IN MODERN WARFARE.*

By **F. A. Hadley, F.R.C.S. (Eng.),**
Western Australia.

The present is a time when our thoughts naturally turn towards the medical aspect of war. Some of us ponder over the sanitary side; how to prevent the army-wasting enteric, how to reduce the ever present diarrhœa or how to get rid of that irrepressible little fellow, the pediculus vestimentorum, who not only causes discomfort but apparently may carry typhus about on his shoulders. Others of us again meditate as to how we should deal with the various complications of the wounded, but perhaps the majority of us think with the picture of a civilian hospital before our eyes, and are apt to believe that in some such institution alone can good work be done, and rather scorn the work done further forward in the field.

For myself, I think in field ambulances, since for the last seven years I have been turning over in my mind the duties and possibilities of these units.

They have been my hobby and that is my sole excuse for airing my views to you to-night, under the hope however that they will raise an interesting discussion.

I shall confine myself to modern bullet wounds of the abdomen and their treatment during the first twenty-four hours. In many instances however, I believe that the treatment I am about to suggest would be the safest for shrapnel wounds also.

First of all let me review the findings of the committee which drew up the official report on the wounds in the South African war.

Death followed small intestine small-bore wounds in 62.8% of the cases investigated, and yet the committee gave the following advice:—

"The treatment of penetrating wounds of the abdomen should at first be carried out strictly on expectant lines, interference by operation only being justified when such conditions are present that little or no hope of recovery without it can be entertained."

What a dismal picture and what depressing advice!

I have gone very carefully into the fully reported cases and have myself seen a considerable number. In almost every post mortem report, peritonitis is mentioned as either commencing or being fully developed. The exceptions included the cases of patients whose death had occurred some weeks after receiving their wound from localized abscesses, and one who had been operated upon at once under good surgical conditions, but in whose case the operation had taken two hours. In some of the cases there were collections of blood, and bleeding was accredited with the cause of death. In one only was the gut nearly torn across, but in the greater number reported the intestinal wounds had the appearance of having been sealed up, or blocked by everted mucous membrane, with adherent coils, requiring separating to disclose their presence.

Several of the patients lived a week or more.

In the report only three patients are mentioned who recovered without severe symptoms. I conclude that cases of this nature were often not reported. I myself have seen at least two men who never felt any inconvenience from their wound, once the pain of being struck, which was said to be like being hit hard with a cricket ball, had passed off. One of these men was given a large meal of chicken and potato by a Boer woman.

The others, who recovered without operation, had various forms of good luck. In Case 23 an abscess burst into the rectum. An abscess burst through a jagged entry wound in Case 19, and similar fortunate occurrences were noted in others, but this method of nature can hardly be counted upon.

We have now to consider two questions. First, from a purely surgical standpoint:—Would simple, early, that is within eight hours, drainage combined with the Fowler position, and more or less continuous rectal salines have saved a considerable proportion of the 62.8% of the patients who died; and second:—Is this method capable of being carried out by a field ambulance?

In ruminating over these small intestine cases, I have arrived at the conclusion that this simple operation would save many lives. On the other hand it might be performed on a few who would have recovered without it. These few seem to me to have been the cause of many lives being allowed to slip away when an effort might have been made to save them.

The surgeon gains the impression from emergency work at any large civil hospital that the mortality of peritonitis is in inverse ratio to the time when the abdomen is opened and that the emptiness and comparative cleanliness of the intestinal or stomach lumen and the soundness of the general constitution is scarcely of less prognostic importance. It would seem that fatality is more dependent upon these points than upon the cause of the disaster, be it puncture, natural perforation, or any of the other many causes.

When these conditions are favourable very little is necessary to save life, although we may be tempted to perform some radical operation in the hope of being able to prevent recurrence.

Now soldiers when wounded are healthy and generally hungry, and a field ambulance alone of military organizations gets them early. Only occassionally are such cases sent to a general hospital except in a dying state, or hectic with localized abscesses. I should doubt if they ever arrive at a hospital under 24 hours; as a rule three days or more

*Read at a meeting of the Western Australian Branch of the British Medical Association on November 18, 1914.

elapse before they get there. During the transit they are rumbled along on a motor lorry or train.

Many of the patients mentioned in the report had lengthy operations performed upon them. To my mind an operation is only justifiable if it can be completed within 15 minutes, and can be done under local anæsthesia, to prevent post operative vomiting. I suggest that in the majority of cases a pelvic drain through a small supra-pubic incision is all that is required. If intestinal contents show themselves, a slight enlargement of the wound will suffice for gauze wicks in split tubes to be worked towards the affected area. The origin of persisting hæmorrhage could also be controlled by packing, and retained blood clots could be evacuated.

If a badly damaged coil should be encountered, it could be brought to the surface, either through the same incision or through a second one made in a suitable place and fixed there; an enterostomy can then be carried out.

To render this treatment efficient I consider that the patient should be placed in the Fowler position, and in the after care more or less continuous rectal saline injections employed.

It is now a well recognized fact that the pelvic peritoneum, even when bathed in pus, does not absorb toxins in the same way as the upper peritoneum.

How extraordinary well many patients look, sitting propped up, while filthy smelling fluid is oozing out of a supra-pubic pelvic tube! Let us abolish that much used phrase among ambulance men "lying down cases."

After this operation I suggest that small doses of morphine be given for eight hours, followed by injections of pituitrin and eserin, which have such a marked effect in keeping down abdominal distension.

Let me again reiterate that I suggest minimal operative interference.

Now as to the second question. Is such a proceeding feasible under the conditions? This is only of importance if you grant the need of early operative measures.

Let us consider what facilities for the work a field ambulance is supposed to possess.

Each section has an operating tent, an operating table, and a good overhead lamp. If all three sections are working together, one such tent could be spared to deal with this type of case, and I mention that this work need not interfere with the treatment of other more important, because less severe cases.

There is nearly always some pause after a strenuous day's fighting, except in the case of retreat. If the battle is stationery, the field ambulances have opened out, and are at work whilst fighting is actually going on. They are pitched in some sheltered hollow, more or less out of shell-fire.

Their bearer divisions are working between them and the firing line. There are nine officers; only three of these at the most are required with the bearers. One in my opinion should be the recognized surgeon to deal with the more difficult cases. I tread perhaps on rather delicate ground, but the War Office has already boldly entered in, recognizing the need of special training, and its grants extra pay for officers who train for and pass examinations for the special subjects. I hold that one officer should be appointed to each field ambulance, and that it should be his duty to deal with the major work. When fighting is not in progress,, he should take his duty as an executive officer, according to his rank, but as soon as a field ambulance opens out his position should be at the chief dressing station. He should have two nursing orderlies, whom he has trained for the work, and who know his special methods.

How is this officer to make himself sterile during the rough conditions of a campaign? Firstly, he must at all times attend to his hands, and even wear ordinary gloves when riding and when doing dirty camp work. Then with nailbrush, soap, and the antiseptic solution which his experience has shown him to be the best for his own skin, and gloves which must be carried sterile, he will be safe. Gloves must form part of the equipment. There ought also to be some clean gowns always available. They need not be long, and they may be made of thin material; they must be clean, but not necessarily sterile. They can be packed by compression in a small space. Their object is to prevent particles falling from the surgeon's clothing. Besides the gowns, sterile sleeves, packed in pairs, ought to be carried. New ones can then be substituted between operations. Instruments can be returned to the sterilizer and handed by an orderly with forceps. Only the simplest are required. An unexpected call for some instrument not put out can be answered by immersion in pure lysol. Drainage tubing should be carried sterilized in screw-top bottles, and gauze and swabs in compressed, aseptic packages. So much for the theatre or operating tent necessaries.

Now as to the patient. Experience has shown that painting the skin with iodine, without previous washing, renders the operation safe. To cover the rest of the patient, sterilized sheets with a slit in them should be carried compressed and packed ready for use. They should be returned to the base when used, and new packages requisitioned. If there should be a shortage they can be boiled and used wet.

Unless the patient is wet from rain and mud when brought in, there is no necessity to remove all his clothing. Such a proceeding would only cause unnecessary exposure and shock. In most cases a local anæsthetic will be found to suffice, but if this proves insufficient a little general anæsthetic could be superadded. The less the better, as the patient has to travel within a few hours.

Let me now consider the treatment of those abdominal cases from the time they are hit. When first found an injection of morphine is distinctly advantageous. There is no fear of masking symptoms, since with few exceptions every case should be treated as if peritonitis was expected to intervene. There is no doubt that morphine reducing peristalsis allows adhesions to form. At the same time it reduces shock to a marked degree. As much warmth as can be provided should be applied from

the first, and I think that, if not actually under fire, the soldiers with abdominal wounds should be the last to be removed from the field, as they will have recovered somewhat from the initial shock. They should have their morphine when first seen, and be left propped up.

On arrival at the dressing station they should not be removed from the stretcher until they are put upon the table. After operation they should be placed in a tent, building, or open spot which has been set apart for severe cases, and put into a semi-sitting position. A hot rectal saline injection should be administered. They should be the last cases to be removed. During removal they should still be kept propped up, and during the journey another saline injection should be given. This can be administered by a well-trained waggon or train orderly, from a thermos flask, without difficulty. A stock of these flasks should be part of the equipment of a field ambulance and of a convoy detachment. They can be carried in the lockers of the ambulance waggons.

I consider these saline injections a most important part of the treatment, as they do the flushing of the general peritoneal cavity. This may seem ideal treatment, but I hold that it is possible in the majority of instances, or, at all events, on many occasions. Once it has been carried out, it matters less how long the patient is on the road, in fact I should prefer a wait of some days when possible before taking them on a long journey.

I know that these views are not those generally accepted by army surgeons. No doubt they are open to much criticism, but with an army as well equipped with field ambulances as the British is, I think that in many instances they could be carried out with great benefit. When they cannot be, well, then I consider it is so much the worse luck for the unfortunate men through whose small intestines a small bore bullet has found its way.

HEREDITY.

New Psychical Theory.

By John Scouller,
Sydney.

The subject of heredity is one of perennial interest and one which has engaged the attention of thoughtful minds from time immemorial. But it is only during recent years that an effort has been made to find a theory which would bring the varied phenomena embraced under this category into a rational system having its basis in natural science. The pioneer in this attempt, as he was in that of trying to put the phenomena of evolution on a scientific basis, was Charles Darwin.

Darwin's Theory of Pangenesis.

Darwin's efforts to penetrate the system of heredity were evidently dictated by an intuitive feeling that his theory of evolution by means of natural selection operating through the struggle for existence was incomplete without a corresponding theory of heredity, which should explain the means whereby the variations arising through natural selection were transmitted to subsequent generations. Accordingly he gave much attention to the phenomena of heredity and set himself the task of discovering a theory which would explain the principles underlying such phenomena. And it was a peculiar feature of this attempt by Darwin to penetrate the mystery of heredity that the more he ruminated upon it only the more involved did it become, until he lost the power of judging as to its merits or demerits.

The theory which Darwin at length succeeded in evolving was given to the world under the title of pangenesis, and of this we shall now proceed to describe the leading features.

In working out a rational theory of heredity Darwin was faced with the difficulty of having to explain how a single nucleated germ-cell, by means of cell division, is capable of giving rise to the myriads of other cells whereby the human organism is built up. It was also necessary that he should be able to explain how the various cells thus produced have the power of building up a human embryo, which in its development passes successively through every stage of embryonic animal evolution before reaching the full development of the parent organisms from which the germ-cell was derived. It was likewise necessary that he should be able to give a rational explanation of the means by which the resemblances between offspring and parents, as well as more remote progenitors, is brought about. Another thing which should have engaged the attention of Darwin was to find an adequate explanation of the fact that no two organisms—not even two blades of grass or two peas—are ever precisely alike, while in some cases the offspring differ very materially from the parents, as in the case of "sports" from which new species and new varieties have been known to arise.

The theory of pangenesis by means of which Darwin sought to account for these facts proceeds upon the assumption that each of the myriads of cells which compose the human organism are continuously giving off material particles or "gemmules" of a like nature with themselves. And it was his opinion that such gemmules, after circulating through the blood for some time, eventually settle down in that portion of the organism where the reproductive cells are produced. At length such gemmules, according to Darwin's theory, combine together, as the result of elective affinity, and by this means "buds," or reproductive cells were supposed to be formed, each containing one or many gemmules derived from every cell of which the organism is composed. Darwin further assumed that the gemmules thus contained within the reproductive cells become active after fecundation and develop into cells similar to those from which they were derived, in the same order as that which took place in the ontogeny of the parents.

In this manner Darwin sought to explain the means by which a germ-cell is able to develop into an organism similar to that of the parents, and at the same time he was of opinion that this afforded a reasonable explanation of the principle by which parental characters are transmitted to the offspring.

But as it not unfrequently happens that children bear a striking resemblance to one or other of the

grand-parents, and even to more remote progenitors, Darwin found it necessary to assume that the germ-cells contain gemmules derived not only from the parent organisms, but also from those of progenitors even to remote generations. How such gemmules come to find an entrance into the reproductive cells is not made quite clear, but the necessities of the case demanded that they should be there, and there accordingly they were assumed to be.

Such, briefly, is the theory of pangenesis by means of which Charles Darwin sought to account for the varied phenomena of heredity. And it is not to be questioned that the theory is a most ingenious one or that it might possibly serve to explain how the transmission of physical characters is effected, provided it could be shown to have a substantial basis in scientific facts or in necessary inferences from such facts. Such proof, however, is not forthcoming. But even if it were pangenesis could offer no sufficient explanation of the transmission of mental or psychical characters from progenitors to offspring, for it is admitted by all competent authorities that the phenomena of consciousness and thought cannot be explained by the movements of material particles.

But pangenesis stands condemned as a rational and scientific explanation of the phenomena of heredity for the reason that it is incompatable with well established facts in connexion with embryological science. For we are told that the child is not only a distinct animal from the mother, but that the ovary of the mother, from which such child originated, is quite as old as the mother herself, having been well developed in her own embryonic state. Thus it is manifest that the reproductive cells of the mother could not possibly have been built up in the manner assumed by Darwin. And the same, we are told, is true as regards the male elements.

Thus it will be seen that Darwin's theory of pangenesis does not satisfy the requirements of a rational and scientific theory of heredity. Nevertheless it has to be recognized as a most important contribution to the literature and science of the subject, inasmuch as it was the first step towards the formulation of a scientific interpretation of the facts. And we know that it is always the first step which counts. Therefore we consider Darwin worthy of high commendation for his bold attempt to penetrate a jungle hitherto untrodden by the foot of man. In this respect he has acted the part of the hardy pioneer who has opened up new country and blazed a track so that we who come after may go in and occupy the land.

Weismann's Theory of the Continuity of the Germ-plasm.

Although Darwin's theory of pangenesis never succeeded in establishing itself, for the reasons which we have seen, still it certainly possessed the merit of stimulating thought in others, and by this means it has had the effect of giving rise to subsequent attempts to reach a more rational and scientific explanation of the varied phenomena of heredity. And amongst those who have followed in Darwin's tracks with the view of still further opening up the country and rendering it habitable, a foremost place must be given to Professor Weismann, whose theory of the continuity of the germ-plasm is a direct outcome of Darwin's theory of pangenesis.

This theory is now widely accepted amongst scientific men who generally regard it as offering the most satisfactory explanation of the fact yet brought forward. At the same time there are not wanting many, chiefly amongst his own countrymen, who regard it as a mere chimera of the imagination, utterly devoid of any sufficient basis. But let us see for ourselves how far it is or is not competent to explain the facts.

In his work on "The Germ Plasm" Weismann tells us that it was Darwin's theory of pangenesis which first gave the impetus to his own studies and researches in connexion with the problem of heredity. For, he informs us, he regarded that theory as being one of great importance, inasmuch as it was the first attempt which had been made to formulate a complete theory covering all the known facts relating to the transmission of the characters of the parents to their offspring. But seeing that Darwin never made any attempt to demonstrate his theory experimentally, Weismann came to the conclusion that he regarded it simply as a provisional hypothesis, requiring to be more fully worked out before it could be regarded as a completed theory. Hence he felt moved to take up the problem where Darwin had left it, with the view of elucidating the whole question of inheritance. And the studies and researches thus entered upon have resulted in the elaboration of the now famous germ-plasm theory.

The germ-plasm theory was developed by Weismann in a series of essays, published during a period extending over some 10 years, and the substance of these was afterwards embodied in a single volume of which a translation under the title of "The Germ Plasm" appeared some few years ago. Since then his views and ideas have expanded considerably, and these have found expression in a work entitled "The Evolution Theory."

Weismann's theory, like that of Darwin's, has its basis on the cell theory of physiology. For, he tells us, he regarded it as an undoubted fact that all organisms grow out of the mother-cell, which has the power of giving rise to other cells with different kinds of idioplasm (The Germ Plasm, p. 34). In other words Weismann adopts the cell theory, but unlike Herbert Spencer and others, he considers that the various cells comprised within the organism are not composed of identical physiological units, but that they belong to different orders and degrees, possesing different qualities, and exercising different functions in the building up of the organism.

Arguing from the assumption that the various forms of life with which we are acquainted invariably arise from others similar to themselves, Weismann considers it a necessary inference that what is true of individual organisms must likewise be true of the various orders of vital units of which the organism is composed. Hence he contends that each of the earliest and lowest organisms (the protozoa) must be neither more nor less than the equivalent of one biophor, or vital unit. All those biophors of a higher order, which are adapted to

special conditions of existence, and which in endless variety form organisms as we see them around us must possess historical qualities, they therefore can only arise from others like themselves, and cannot be formed spontaneously. This fact, he tells us, is confirmed by experience. Not only does a cell always produce a cell and a nucleus a nucleus, as de Vries, and more recently Wiesener have shown, but all other constituents which occur in the cell-body and determine its structure never occur, so far as we know, by generatio equivoca, or as de Vries expresses it nonogenetically, they are always produced by the division of cells already present (op. cit. p. 74).

Now if the word cells be substituted for that of "biophors," the latter being equivalent to Darwin's gemmules and purely hypothetical, then we think it must be admitted that Weismann's reasoning is perfectly sound. For it has its basis on the principle of the unity of nature, and the uniformity and universality of nature's laws. Hence the argument that the various cells must follow the same principle of development as that which obtains in the organic world generally is manifestly based on sound scientific principles.

But there is one thing which vitiates Weismann's whole argument, though it is not apparent at the first glance. Thus it may be admitted that, as a general rule, the various forms of life (including cells and biophors—if biophors there be), invariably arise from others like themselves. But, how, then, are we to account for the fact that the many different orders of cells with different kinds of idioplasm are all produced from the one germ-cell or mother cell?

Still it has to be acknowledged that the conclusions reached by Weismann are of much importance, for they introduce the conception of differences existing in the nature and constitution of the physiological cells which go to form the organism, such cells being thus regarded as possessing different psychical qualities, and as exercising different functions in the building up of the organism, this being a necessary factor in order to account for the varied phenomena of heredity. In fact such a conception makes its impossible any longer to regard the organism as being a machine composed of an aggregation of material particles, in accordance with the chemico-physical principles of modern science. On the contrary it makes it necessary for us to regard the organism as a living, co-operative cell-community,—a veritable republic composed of innumerable living entities; or, better still, a microcosmic reproduction of the great macrocosm, as it was regarded in ancient times.

The conclusion reached by Weismann was that the reproductive cells belong to quite a different order from the somatic or body-cells,—that they are differently constituted and exercise distinct functions in the organic cell community, being quite independent of and wholly uninfluenced by the somatic cells. For it was his contention that the reproductive cells are evolved directly from the germ-cell, and consequently that they are possessed of a nature and constitution similar to such germ-cells, while the somatic cells are supposed to be derived from other cells during the process of cell division. But considering that they are all derived from one mother-cell, we cannot see why one section should be regarded as daughter-cells, while the other is supposed to consist of nondescripts of an inferior order. However, Weismann contends that the germ-plasm, which he assumes as being the constituent element of the germ-cells, divides itself into two parts, from one of which the reproductive cells are produced, while the other develops into the various orders of body-cells which go to the formation of the organism. At the same time he was forced to admit that the germ-plasm must, to a greater or lesser extent, be distributed throughout the somatic cells, this being necessary to explain the processes of regeneration, repair, and also of a sexual reproduction.

There is just a little confusion of thought here, for if, as Weismann tells us, the germ-plasm divides itself into two parts, from one of which the reproductive cells are produced while the other is employed in forming the somatic cells, then one would naturally conclude that both were equally composed of this germ-plasm.

The distinction thus made by Weismann between the reproductive and somatic cells seems to have been anticipated by others. Thus in 1847 Owen referred to the possibility of distinguishing between those cells which become much changed to form the body, and those which remain virtually unchanged, and form the reproductive organs. It appears that the same distinction was observed by Haeckel, Rauber and Jaeger, while in 1872 Galton maintained that a certain residue (of the "stirps," or germ-plasm) were kept apart from the development of the body to form the reproductive elements of the offspring.

Thus it will be seen that Weismann's theory of the continuity of the germ-plasm is supported by a respectable body of scientific authority. And there can be no doubt that it possesses the element of plausibility in a high degree, for it now constitutes the generally accepted theory amongst biologists of the day, and also amongst scientific men generally, by whom it is regarded as offering the simplest and most satisfactory, if not the only possible solution of the involved problem of heredity. For the germ-cell is thus regarded as being composed of a plasma, which is identical with that of the germ-cells from which the parental organisms were derived, and consequently it is natural to suppose that under like conditions it will act in a similar manner. As Professor J. A. Thompson puts it "similar material to start with, similar conditions in which to develop —therefore like begets like" (Heredity p. 44). Thus the continual succession of reproductive products of an identical character, somewhat differently arranged, is supposed to solve the whole mystery of heredity. But it will not be difficult to show that the conception of a germ-plasm of this nature is not in accordance with the principles of a true science or of a sound philosophy.

Having thus gained the conception of a germ-plasm, or hereditary substance, as forming the con-

stituent element of the germ-cell, which germ-plasm is supposed to pass directly from the germ-cells out of which the parents were evolved, to the reproductive cells from which progeny may subsequently arise, the way seemed clear for the formation of a rational theory of heredity, based on the principles of modern science. Accordingly, Weismann bent all the energies of a very acute mind to the task of formulating such a theory in which the varied phenomena of heredity should find a sufficient explanation.

For this purpose, it was necessary that Weismann should begin by forming some conception as to the nature and constitution of this hypothetical germ-plasm. It was necessary, likewise, that he should think out the various factors which must enter into the composition thereof, in order that he might be able to account for the observed phenomena. His mind, however, was dominated by the materialistic spirit of the age, and hence he was compelled to adopt a theory as regards the composition of the germ-plasm somewhat similar to that of Darwin. For he assumed that each cell of which the organism is composed must have been represented in the mother-cell from which such organism was derived by "several or many" material particles, to which he gave the name of biophors, or "bears of heredity," these being equivalent to the gemmules of Darwin's theory. Thus, he says, "It seems impossible to avoid the stupendous assumption that each of the millions of cells in a multi-cellular organism is represented in the germ-plasm by several ordinary kinds of biophors."

In his work on "The Evolution Theory," Weismann goes more fully into detail as regards the nature and functions of those vital units which he assumes as being the constituent elements of the germ-plasm. Thus he tells us that "the hereditary substance is of a material character, being constituted of the chromatin substance of the nucleus"—so-called because it is affected by dyes which serve to bring it more readily under observation. And this hereditary substance, we are told, "contains the primary constituent not only of an individual, but rather those of several, often of many individuals." Then, further on, he tells us that "the hereditary substance in the fertilized ovum consists of several complexes of primary constituents, each of which, an id, comprises within itself all the primary constituents of a complex individual"; in fact, he tells us that, as a consequence of sexual reproduction, the germ-plasm of each individual must be comprised of several ids (or germs of separate and distinct organisms) individually different (op. cit., Vol. I., pp. 347-8).

The results of the process of bi-sexual reproduction Weismann terms "amphimixis," and it is by this means that he seeks to account for the transmission of ancestral traits of character from the parents to their offspring.

Weismann further informs us that compound chromosomes consist of several ids, and these he terms idants.

Thus we are asked to believe that the germ-plasm consists of a larger or small number of ids, or primary constituents of an individual, and to these he has given the name of "determinants," for it is through the co-operation of these that the individual which develops is determined.

Now, it has been said that "faith is the evidence of things not seen," and certainly Weismann affords a striking instance of the fact that the principle of a lively faith works quite as effectually in the case of the modern scientific savant as it does in that of the religious devotee. For it is truly marvellous the things which Weismann, with the eye of faith, thus sees in the chromatin substance of the nucleus, which is indeed a "minimal" quantity, so small as to be barely discernible with the aid of the most powerful microscope, and yet he is able to discern the composition of this chromatin substance, and assures us that it consists of a germ-plasm which contains not merely of one id, comprising within itself the primary constituents of a complete individual (op. cit., p. 264), but also of a larger or smaller number of ids as the constitutent elements of the germ-cell of every plant and animal (p. 353). Great indeed is the power and efficacy of faith!

But beyond this, he has likewise been able to discern the process by means of which these hypothetical determination come to find their appropriate places within the organism which is developed therefrom. And thus he is able to inform us that such determinants sort themselves out as the result of an elemental "struggle for existence" going on amongst the biophors of which the germ-plasm is said to be composed. As to what the deciding principle in this struggle for existence may be—he is not quite sure, but he thinks it may be—owing to a preponderance of one kind of determinants over another; or perchance it may be that dynamical differences have something to do with it (op. cit., Vol. II., p. 52). Moreover, it is on this struggle between homologus determinants, he believes, that the whole diversity in the mingling of the paternal and maternal characters depends.

Thus, it will be seen that Weismann, as the result of an act of faith, introduces the principle of natural selection through the struggle for existence into the kingdom of the "infinitely little," just as Darwin, by means of a similar exercise of faith, was able to perceive its operation in the organic kingdom. And for this we consider that he has ample justification in the principle of the uniformity and universality of natural law. Two conditions, however, are essential to render such justification valid: one is that the principle of natural selection can be established as a *vera causa* of organic evolution, and the other is that proof be forthcoming as to the real existence of the hypothetical determinants of Weismann's theory. As regards the latter condition, it will not be difficult to show that such determinants have no existence whatever outside the brain of the learned professor; and, as regards the former, we find that Weismann himself has now come to recognize that natural selection has nothing whatever to do with the transformations of species. Thus, he informs us (op. cit., Vol. II., p 135) that "it is germinal selection alone which brings about the presence of a majority of ids with determinants varying in the same direction, and personal selec-

tion (by which he means the natural selection of Darwin's theory) has no part in the transformation of species.

It will thus be seen that Neo-Darwinism, with its dogma of "the all-sufficiency" of natural selection, of which Weismann was the leading exponent, has completely vanished, like Darwinism itself, and Weismannism, pure and simple, is proffered instead thereof.

Weismann's new theory of germinal selection is based upon the opinion that determinants must be assumed, and that the germ-plasm must have room for them—the existence of a germ-plasm being thus taken for granted.

The question as to whether his views are in harmony with truth or not he leaves the future to decide. But while he admits that the new facts which are every day coming to light, as the result of modern scientific research, may necessitate the more or less complete reconstruction of his theory. he is confident that the principle lying at the root thereof cannot be assailed, for he considers it an established fact that the principle of selection does rule over all the categories of vital units.

Now, it is our contention that it is utterly impossible to form any rational conception as to the nature and constitution of the hypothetical germ-plasm. And for our own part, we do not know how it should be defined, whether as a material substance, a psychical entity, or collection of entities, or a stream of tendency—for it partakes of the nature of all three. And we have no hesitation in defying the whole scientific world to bring forward a definition in harmony with the principles of a true science and a sound philosophy.

The fears of Weismann as to the ultimate stability of his elaborate theory, founded on the continuity of the germ-plasm, are beginning to find rapid realization. For modern scientific research is gradually showing it to be entirely without foundation. Thus, for instance, it is entirely inconsistent with the principles of heredity which have been revealed in connection with the discoveries made by Gregor Mendel. For such discoveries show conclusively that the so-called germ-plasm has no real existence, and that the primary constituents of which it is said to be composed—the ids, idunts, and other determinants—are mere figments of the imagination.

But while it is true that Weismann's theories entirely fail to solve the problem of heredity, yet it has to be admitted that his painstaking labours have not been altogether in vain. For it is unquestionable that his researches have been the means of carrying the subject to a higher stage than that reached by Darwin in his theory of pangenesis. In fact we regard the theory of the germ-plasm as well as that of pangenesis as being necessary stages in the complete solution of this involved problem. Thus, for instance, he has had sufficient penetration to discern the important fact that degrees must exist in the heirarchy of cells of which higher organisms are constituted—though at the same time he had no sufficient explanation to offer as to the nature and origin of those cells. Moreover, he has the merit of having perceived clearly the fact that the reproductive cells must possess an inherent property of permanence or immortality, this being necessary to explain the element of continuity which is manifest in the varied phenomenon of heredity and evolution. It is evident, however, that he has failed to realize the true significance of these facts, otherwise we do not see how he could have failed to reach conclusions similar to those of Leibnitz, whose theory of monads is much more rational and scientific than that of a "particulate" germ-plasm, and we hope to show that it alone supplies the key by means of which the problem of heredity can be solved.

(To be continued.)

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Reports of Cases.

PTOMAINE POISONING ON A WARSHIP.

By **F. Hamilton Kenny,**
H.M.A.S. "——."

This short record deals with food and a slight outbreak of food poisoning which happily ended well, but, at the same time, might have robbed the navy of two fine sailor men, and perchance of myself. It affords to me also thought on the question of victualling of cold storage on gunboats—of the treatment of food and the details of a mess room. We put to sea on December 7th. There were eight officers in the wardroom—the Commander fed apart—I need hardly say we were all in perfect health and spirits; our gunnery and steam trials also put up the trial of *mal de mer*. Personally I jettisoned an effete cargo, and felt much relieved and could carry on all right. I have an S.B.A. (sick boy attendant), a learned man; he talks much. He is reported to have been indiscreet enough to vaunt a perfect cure. I regret to say that I can personally vouch to his being a very early victim and an eager claimant for the ship's side.

Gradually—day by day—meal by meal—I awoke to the fact that meals were not à la mail steamer, but restricted and contracted, and assumed an aspect I had seen years ago in Western Australia. We called it then the "tin dog" aspect. Sailor men call it "Fanny Adams." It's one and the same thing—tinned, canned food—breakfast—lunch—dinner. I also became acquainted with the sad fact that the cook—as a cook—was a dismal dreary blighter. He may be able to stoke. He can't cook. I used to think Pharaoh a harsh brute—a German,—his baker as an ill-used man. I think better of Pharaoh now.

In two days the fresh meat was gone—at the close of another bread was absent—the tinned butter to me was ever rancid—a few more days and we had but distilled warm water with a suspicion of engine room oil in it.

Potatoes vanished, and rice was said to be somewhere in the hold. The rice alone reappeared.

I have mentioned my views on cook. I won't add to them.

Well, we laughed and joked for the most part. The Paymaster was our honorary caterer, and under him was an excellent Chief Steward, late of a swell liner, and some good boys. They all grew more used to lumping ammunition round than grub. A paternal naval board gave us 1s. 4d. per diem for rations. The fourpence I think is distinct extravagance. If you can't do the game in the wardroom on a bob—fourpence extra won't help much—at least not in Australia—(I'd love a meal at a sixpenny hash house in Sydney).

If we lived a suctorial existence things would not have been so bad for that side of a mess is an allright side so far as officers are concerned, and as for sailors and stokers—well—inboard—they cultivate abstinence.

We lived the cheery simple sailor life, and proceeded on our lawful occasion towards our goal.

The 16th of December saw us at breakfast at 8 a.m. as per usual. I noticed the chief engineer had a nice bit of tinned herring on his plate. I don't dote on tinned herring, but as that was all, I had some two square inches. I

had in addition a quarter of a large biscuit. I ate my herring, finished my quarter with raspberry jam, and had even a little cocoa. I am not greedy—I don't even love a groaning board. Then followed sick parade at 8.30, prayers, divisions, physical drill, gunnery exercise, fire drill—all things which are not my "pidgin."

At 10.30 I got an invitation to the Commander's room, and presently he offered me a cigarette, which I declined. I said, "the motion here seems upsetting me." I excused myself, and under five minutes I was hard at it, vomiting, re-vomiting, and going on vomiting. I got no relief, which struck me as curious. Presently the Commander paid three visits at very short intervals to a private retreat, and I guessed the trouble that he and I were in for, was food trouble. News then came to me that the chief engineer was down and vomiting badly. I was semi-collapsed, and couldn't move. I lay on my back, took brandy, and gave orders to my S.B.A., who carried them out well. We had a very sticky time till the middle of the afternoon. The Commander was passing pure blood per rectum, and vomiting in a way that made his muscles ache for days after. "Pay" had gallantly chipped in, and was vomiting his best, and last but not least the navigating lieutenant eclipsed the Commander and all of us by an act of syncope with his head against a stanchion. Well, things were a bit serious. It kept all of us lying flat—a bowl at the head, a bedpan below. We couldn't swallow, and I kept medicine in reserve. We vomited and purged away, while our intestines griped us till we ached. Brandy prevented collapse, but up it came, and on we went. About 3 p.m. I seemed to myself to have reached bottom. The vomiting ended, so I got on my feet and did the rounds. I felt satisfied that we weren't going to have a funeral, and that made things cheery all right.

I kept the Commander very quiet. I used hot foments for the colic and kept strychnine handy for any bad collapse —ditto, pituitary extract. The navigator had more colic, but the Commander and self divide the prize for vomiting.

That evening we steamed up a well known channel "with our sick beneath the awning." The Commander and chief engineer lay flat on the starboard, the navigator and surgeon equally supine on the port side of the poop deck—"Pay," who was rapidly "welling," lay in his bunk below.

Think of it—two dead herrings put five out of nine officers *hors de combat*. We all ate the same thing. Luckily this outbreak was aft—not a man forward got touched.

The morning of the 17th saw us alive—weak and efficient.

The 18th saw us pretty good—weak in the back and knees, and careful as to dietary.

On that day I inspected 3 patriotic muttons, and one since.

The bo'son's mate had to put several pounds of lead on them to induce them to go away and leave us. This they did—suddenly—vertically. A slice of fresh meat—a drink of fresh water—no oil in it—a plain rice pudding, and Xmas 1914 will be of the best.

Will the baneful presence of *Fanny Adams* be banished on that date is the burning question in the wardroom?.

Well, anyway, that Tasmanian cider is first class, and the beer is all right, and there is biscuit.

There is a certain cheery old gent, said to live on the equator in Hades. He looks after his own as all sailor men know. He showed the wardroom how to get and we got a lovely Xmas dinner—after all.

Reviews.

MENTAL DEFECTIVES.

We have received an excellent translation by Dr. Drummond, of Edinburgh, of Binet and Simon's work (1) on "Mentally Defective Children." As Professor Darrock points out in the introduction to the book, there has been discussion on the subject of the Binet-Simon tests of intelligence; much of this has been carried on without a knowledge of the aim of the authors. In the introductory chapter, the authors show their aim clearly. The ideal which Binet sought to arrive at was to establish not an absolute standard of intelligence for all children, but rather a scale of intelligence. He does this by fixing a normal standard for each age; this is determined by a series of tests suitable for varying ages.

The selection of the defective child is made by the teacher, and the age-group determined by the tests. For this to be satisfactory, the teacher must have a knowledge of experimental psychology, in order to realize the importance of the results. The medical officer and school inspector act as referees, determining whether the child is suitable for a special school.

The chapter on the utility of special legislation should be of great help to all workers in sociological questions, as well as to the educationalist.

The authors demand that exact notes should be kept of every child, in order that the best system may be established of dealing with the various types of defective children. The utility of the school must be established, the aim being to turn out the pupils, so that they may take their place in society as useful members, capable of earning their own living.

Statistics taken from some of the French and Belgian schools show that 50% have been apprenticed to a trade, and 75% able to work.

The work is interesting to the educationalist, showing the newer spirit in the training of teachers and "that methods of scientific precision must be introduced into all educational work to carry everywhere good sense and light."

FLIES AND DISEASE.

The important rôle that non-biting flies may play in the spread of specific diseases amongst men and animals, coupled with the means they afford for contamination of foodstuffs by the organisms of decomposition, is now fully realized, and much of the accurate knowledge we possess of the habits and behaviour of these little pests has been disseminated by the first edition of the volume before us (2). Though only a year has elapsed since the appearance of the first edition of this work, much important information has in the interval, been published, and a summary of this, together with further observations made by the author, appears as an appendix of 90 pages. This additional matter includes notes on the size of flies as determined by the food of the larva, on the range of flight of flies, on the relation between flies and dysentery and summer diarrhœa, on the Indian blood-sucking and non-biting flies and on the various parasites and enemies of flies. Australian work is represented by a summary of Froggatt's investigations into the blow-fly pest of sheep. A review of the first edition of this most useful work was published in the Australasian Medical Gazette. It will, therefore, be unnecessary to enter into full details in this place. The author deals with every aspect of the life of such flies as may be responsible for the spread of disease, from their anatomy and habits to their prevalence and powers of flight, from their own natural enemies and diseases to the diseases and dangers to which they may expose man, and from identification of the larvæ to that of the adult insects. Every public health officer must be acquainted with the book and should obtain a copy of the new edition; to the general practitioner, especially if living in fly-infested country districts, the work will prove of great interest and importance, and will indicate avenues for useful further research. To the naturalist—and what medical man is not at heart a naturalist?—the volume appeals more especially. It shows how entomology, parasitology, bacteriology, hygiene and other sciences enable us to view clearly the manifold activities of the life of even a common fly. No longer should Musca domestica be to us a common fly and "nothing more."

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(1) "Mentally Defective Children," by Alf. Binet and H. Simon, M.D., translated by W. B. Drummond, M.B., M.Ch., F.R.C.S., with an appendix by Margaret Drummond, M.A., 1914. London: Edward Arnold; Crown 8vo., pp. 180. Price, 2s. 6d.

(2) Flies and Disease, Non-Blood Sucking Flies, By G. S. Graham-Smith, M.D., Cambridge Public Health Series, Cambridge University Press, 1914, second edition, pages xvi + 369, with 27 plates, 82 Text Figures and 20 Charts. Price, 12/6 net.

Medical Journal of Australia.

SATURDAY, JANUARY 30, 1915.

The Prophylaxis of Pertussis.

In a somewhat belated annual report on the health conditions of the Metropolis of Sydney, the Medical Officer of Health records the bare fact that the number of deaths caused by whooping cough has increased from one in 1908 to 83 in 1913. A short resumé of the report will be found on page 111 of the present issue. When compared with other causes of infant death pertussis may not appear to be a very serious affection. But the fact that 474 deaths were caused by diarrhœa and enteritis does not lessen the responsibility of the health authority in respect to another preventable disease which killed only one-fifth of that number. Public health departments are apt to accept events as inevitable, when the contributing conditions are difficult to control, and when radical reforms would be necessary to effect an improvement in the existing state of affairs. The public and the profession have a right to a reply to the enquiry as to the cause of this extraordinary increase in the number of deaths from this common disease. The annual reports of health officers rarely include a spontaneous explanation of uncomfortable facts such as this. The data on which the explanation could be based are within the reach of an energetic and enquiring health officer, and we might assume that the fact would have attracted the attention of every health officer, and would have stimulated him to collect information regarding the incidence of the disease and the environmental and other factors which may have determined the increase in mortality.

A grandmotherly belief is still prevalent that many of the zymotic diseases must attack the majority of children; that these diseases are natural phenomena, and that it is better to be affected during childhood than during adult life, when the severity of the attack is supposed to be increased. In the special case of pertussis isolation is not often taken into consideration by parents, and the only measures adopted are those aiming at the cure of the individual sufferer. More than that, the practice of taking children to a neighbouring gasworks to get rid of the persisting cough is quite common, notwithstanding the fact that the journey will certainly entail contact with other children.

The public should be impressed with certain facts in connexion with this common affection, since the difficulties which the health officer has to overcome are largely due to the popular misconceptions surrounding the etiology and prognosis of the disease. The first fact of importance about pertussis is that the patient is highly infectious from the time of onset of the disease until the characteristic whoop is no longer present. In the next place, the susceptibility to the infection is greatest in early infancy, and is great during the first seven years of life. In adult life this susceptibility is comparatively small. Infection is passed on directly from patient to patients, but at times it would appear as if the infecting material is harboured in clothes and other inanimate objects. As a rule the onset is insidious, and some days may elapse before the diagnosis is made by the parents or even by the practitioner. In these early days grave danger exists of the spread of the infection. On the other hand, the characteristic whoop is so typical and so evident that any moderately intelligent mother will be aware when her child has been in more or less intimate contact with an infected child, and should be on the watch for signs of catarrh, as evidenced by the dry cough and the symptoms of mild bronchitis. These signs are likely to appear from five to fourteen days after exposure to the infection. If mothers recognize the serious danger of the infection, the likelihood of a spread to infants under one year of age, and the ease with which a risk to other children can be avoided by the isolation of a child from the time of onset of the suspicious cough until the disappearance of the distressing whoop, much would be gained. In addition to this, the mother must be impressed with the fact that while the average duration of the attack is a long one, efficient treatment and careful nursing can effect a considerable curtailment.

Enlightenment of the public would place in the hands of the health officer a weapon powerful to cope with the disease. It might, notwithstanding, be necessary to have recourse to legislative measures to gain a complete mastery over it. The aim of the hygienist in this respect would be to prevent infected children from exposing others to the risk of infec-

tion. Very stringent measures should be employed to bring about this end. A severe penalty should be inflicted on every person who permits a child suffering from pertussis to enter a public vehicle or other place where children may be present. Whether sufficient control could be exercised over persons responsible for the custody of children without notification of the disease is a question which should be considered with care. As soon as the whooping cough is banished from public places, and strict isolation of all sufferers is enforced, pertussis will become infrequent, and a sudden and alarming rise in the mortality of the disease will be unknown.

THE MILITARY BASE HOSPITAL IN NEW ZEALAND.

The movement set on foot by the New Zealand Branch of the British Medical Association for the establishment of a military base hospital at Trentham, in connexion with the standing camp is making good headway. The camp contains about 3,600 men, and will be in existence for at least two years. It will serve as a demobilization, as well as a mobilization camp. Up to the present, serious cases have been sent to the Public Hospital in Wellington, but little or no provision exists for the treatment of minor affections and convalescents. The New Zealand Branch, learning that the Defence Department was anxious to erect and equip a temporary hospital at which all cases of sickness, accident or injury could be treated in accordance with modern methods, started a fund for the purpose of relieving the Government of the burden of the expenditure. The fund is not limited to the members of the medical profession; the public is being approached through various channels, and the moneys are being collected in various places, including the newspaper offices. An appeal to the general public has been made by Dr. J. S. Elliott, the President of the Branch.

It is scarcely surprizing to learn that the polity of this movement has been questioned. The public has responded in every part of the British Empire in a most generous and patriotic manner to appeals for funds to increase the comfort of our soldiers and sailors, to increase the safety of our troops, and to improve the conditions of our wounded. In addition, money has been given freely and practically unasked for in aid of those of the Belgians who have lost their means of sustenance through the devastating effect of the campaign. The British Medical Association in Great Britain is making provision for medical practitioners and pharmacists in Belgium and the Universities in the Old Country are helping in various ways. In addition to these voluntary gifts, every British subject who has the interests of the Empire at heart, must have determined long ago that when he is called upon to subscribe to the national or imperial funds for the purpose of enabling the authorities to carry on the war to a successful issue, he will pay his share in the form of tax or other levy with a willingness rarely experienced in the past in connexion with compulsory levies. The cost of the war to the country is enormous, but the resources of the Empire are still greater. But no country is rich enough to allow of the overlapping of State and individual responsibilities.

The Otago Division of the New Zealand Branch of the British Medical Association has determined that the establishment of a military base hospital is a duty of the Government, and that the respective spheres of private benevolence and State responsibility in regard to the war should be more clearly defined. The Division considers that the whole expense of raising an Expeditionary Force, of sending this force to the theatres of war, of maintaining the force during the currency of the war, and of bringing it back after peace has been declared, should be borne by the State or Imperial authorities. Consequently, objection has been taken to the employment of any private subscriptions for "any purpose to which the Dominion is pledged." It was resolved that the equipment of hospitals and the provision of motor-ambulance should be undertaken by the State, inasmuch as these things are included in the duties accepted by the Dominion. The Division demonstrated that these decisions were arrived at after due deliberation of the principles involved, by making a substantial subscription to the fund for giving special assistance to Belgian practitioners and pharmacists who are suffering from the effects of the war.

This decision is quite sound in theory, but we would venture to suggest that, before it is driven to its logical conclusion, the question should be asked whether the various State Governments would find money for the provision of ambulances, hospitals, comforts for the troops and especially for the wounded and for the thousand and one things which are at present being provided out of moneys subscribed voluntarily. If Governments are looking to private benevolence for the provision of these things, surely the question of principle must be waived. Ambulances, motor-lorries and other things are required. Let those who have means pay for them, and do not enquire too closely whether the duty attached to the State, i.e., to the whole population or to those who by industry, skill, genius, or chance are better able to bear the burden than the less fortunate. This principle is abused in other directions totally unconnected with the present crisis. Perhaps it may be possible to apply it at some future date to more fitting problems.

A TASMANIAN INCIDENT.

The Legislative Council of Tasmania considered on January 12 and 13, 1915, the question as to whether a letter, addressed to the Chief Health Officer by a ratepayer of New Norfolk, containing a complaint in regard to the defective sanitation of the municipality and of the slaughter-houses in particular, should be laid upon the table. This sub-

ject has been dealt with in the "Medical Journal of Australia" of January 9, 1915. The Hon. Ellis Dean appears to have studied this article with some care, and even if he failed to appreciate the point of principle dealt with, he has undoubtedly shown some annoyance at the attitude adopted. He is reported to have suggested to the Legislative Council that the Chief Health Officer had taken advantage of his holiday to get the article inserted in this journal. The Hon. Ellis Dean may be interested to learn that it is not the practice of the "Medical Journal of Australia" to formulate principles at the desire of one member of the profession, but that in every case in which public policy affects the practice of medicine, fullest investigations in regard to facts are made, and the expressions of opinion are formed from the facts, and not from the views of persons concerned.

On January 13 the Hon. Minister found himself compelled to comply with the order of the Council, and produced the letter around which the storm had raged. Before he did so, he showed in a manner which would appear to be clearly unanswerable, but which Mr. Dean actually did attempt to criticize, that the complaint made in the letter was shown by the sanitary inspectors to have been justified, and that the Hon. Ellis Dean's statement that the charge was false and malicious was incorrect. In the debate which followed the Honorary Minister's statement, the members of the Council did not hesitate to place their own dignity before the health of the State. Before laying the letter on the table, the Honorary Minister remarked that the responsibility did not rest with him.

By this action, the Legislative Council of Tasmania has cut off a safeguard which has proved of great value in the various municipalities. Amateur Boards who persistently bungle sanitation and health matters are at times kept up to their duties by information reaching the Health Officers from private individuals. The officer never acts on information of this kind without investigation, and frivolous, false or malicious charges are not followed up. Ratepayers in Tasmania will not assist the Chief Health Officer in future, since their names may be disclosed by order of a vain Legislative Council. It is possible that Dr. McClintock may be able to control the sanitary condition of the whole State satisfactorily, without assistance from residents. Tasmania is not so large as to render this impossible. It is not excluded that complaints may be sent to him marked "private and confidential," and may impel him to institute enquiries which would enable him to deal directly with the matter. But in any case, the task of the Chief Health Officer in controlling the hygienic conditions of the different parts of Tasmania has been rendered more difficult by the establishment of the principle that the Council may call upon him to disclose the names of informants revealing defects in sanitation.

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THE BRITISH PHARMACOPŒIA.

The Minister of Public Health of New South Wales has approved of the extension of the period of grace from three to six months in connexion with the date of the official recognition of the 1914 edition of the British Pharmacopœia for the purposes of prosecution under the Pure Food Act, 1908. The reason for this extension of time is to enable manufacturing chemists to prepare large quantities of the drugs and preparations of altered strength. Practitioners in New South Wales will be required to prescribe according to the new Pharmacopœia on and after July 1, 1915.

The Commissioner of Public Health of Western Australia has announced that "when a standard for any particular drug differs from that contained in the 1898 edition, sufficient time to comply with the new standard will be given." We venture to hope that the Commissioner will see his way to fix a definite date for the official recognition of the new edition of the Pharmacopœia. It is essential that pharmacists and practitioners shall be informed when it is necessary to discard the old edition, and to write prescriptions or dispense medicines according to the amended formulæ. Practitioners therefore will be well advised for the present to mark all prescriptions "to be dispensed in accordance with the British Pharmacopœia of 1898."

The position in Tasmania is similar to that obtaining in New South Wales, save that the period of grace accorded is fixed at "three or four months." We presume that the new edition will govern prescribing and dispensing on and after May 1, 1915.

In regard to Victoria no information has been received since the publication of the announcement in the "Medical Journal of Australia," of January 2, 1915, p. 11. No official announcement has yet been made by the Commissioner of Public Health in Queensland or the Minister of Public Health in South Australia. Pending some definite statement in Victoria, Queensland and South Australia, practitioners in these States will be incurring some risk, and subjecting their patients to still greater risk, unless the prescriptions written bear the phrase quoted above, or some similar words.

In the interval medical practitioners and pharmacists should study the changes carefully in order that when the new formulæ and dosage are employed, they will be familiar with the same. Copies of the Pharmacopœia will be available towards the end of February, and in the meantime much information can be gleaned from the excellent articles which have been published on this subject in the "British Medical Journal," from a clear and instructive resumé in the "Chemist and Druggist," and from the articles which have appeared in this Journal. In addition to this the Pharmaceutical Society of New South Wales is preparing a brief record of the more important changes. This record will be distributed to the members of the New South Wales Branch of the British Medical Association in the course of a short time. Armed with this information medical practitioners should have no difficulty in preparing themselves for the introduction of the new pharmacopœia in May or July.

Abstracts from Current Medical Literature.

PATHOLOGY.

(26) The Nature of Bacterial Lag.

W. J. Penfold (Journ. of Hygiene, Vol. 14, July, 1914) has carried out some interesting experiments in connexion with what is known as "bacterial lag." By bacterial lag is understood the interval between inoculation of a bacterial culture and the commencement of active growth. Obviously the subject is one of considerable importance. The author does not attempt to explain the mechanism of lag, although his experiments suggest that he has distinct views on this subject. The following are principle phenomena which he has observed and recorded:—(1) If *B. coli* be subcultured into another sample of the same medium when growing at full pace, it will continue to grow at the same pace. (2) If the maximum rate of growth be interrupted by a short application of cold, growth will recommence without lag on the temperature being raised. If the cold be long continued, lag will tend to re-appear. (3) Differences in the size of the inoculum have practically no effect on lag in the case of large inoculums. In the case of small ones, on the other hand, diminution of the seeding has the effect of lengthening lag, and this lengthening effect is more marked the smaller the seedings become. (4) A lowering of the temperature lengthens the lag. The effect is very similar to the effect on growth. (5) The older the parent culture (within limits) the longer the lag. (6) The length of lag varies with the medium, even if adaptation has been arranged for beforehand. (7) Heat-stable products in *B. coli* cultures on peptone water have in the case of overnight cultures but little effect on lag. (8) After washing the bacteria for two hours with saline, in order to remove possible inhibiting agents, it was found that the lag, on subculture, still occurred and was indeed slightly longer. (9) If a peptone water culture of *B. coli* be centrifuged, it is found that the few bacteria remaining in the supernatant fluid commence to grow again at a quick rate, but not without a period of lag.

(27) Vaccines in Pneumonia.

In discussing the value of vaccines in the treatment of pneumonia, Nathan Raw (Proc. Royal Soc. of Med., March, 1914) states that the dosage recommended by some writers is 10 to 50 million pneumococci, and half the amount for children. In his opinion these doses are too small. To obtain the full effect of the vaccine it is necessary to give it in larger doses, and at the earliest possible moment after the onset of pneumonia. He usually commences with an initial dose of 50 million, followed in twenty-four hours, if necessary, by a second injection of 100 million, and in some cases he has even given 150 million with apparently excellent results. He considers the question of dosage by far the most important of all, and as the result of a large experience is convinced that the vaccine itself is harmless. There can be no question that in a certain proportion of cases it appears to have no effect, and does not seem to influence the progress of the disease one way or the other. On the other hand, in a great many cases an injection of a large dose is followed by a feeling of comfort and relief, associated with a rapid fall in the temperature and slight perspiration. The author has observed in a large number of cases that the progress of the disease is considerably shortened if the vaccine is administered in the very early stages and in repeated doses. In forty-six cases he has given 50 million every four hours for three days, with the result that in the great majority of them the temperature fell and was easily kept under control; the pulse-rate was also decreased, and there was an absence of dyspnœa and delirium, and a more comfortable and less toxic appearance. He expresses the opinion that if a correct vaccine or serum were possessed, pneumonia would be aborted in its early stages, as there is no reason why the attack should last six, seven or eight days before the fever subsides. He has noticed also that the local physical signs in the lung are not materially changed by the reduction of the temperature, but that is not a matter of serious consequence if the fatal toxæmia can be prevented.

(28) The Pancreas in Diabetes.

Major ("The Journal of Medical Research," Nov., 1914) remarks that the conclusions arrived at by different investigators as to the role played by the pancreas in diabetes has been somewhat contradictory. The problem has been attacked both from the standpoint of pathological studies on the pancreas from fatal cases of human diabetes and also by means of animal experimentation. The majority of the workers favour the hypothesis that the essential lesions are in the islands of Langerhans. Some investigators have not concurred in this opinion. Herzheimer, in a series of 20 cases, found the islands of Langerhans normal in the majority of instances. Major presents the results of an analysis of a series of pancreases from fatal cases of diabetes, and as a control another series from patients dying of various other diseases. In all 13 cases of diabetes and 35 of other diseases were included in this series. The presence of chronic pancreatitis with increased fibrous tissue was observed in 26 of the 35 cases. Marked chronic pancreatitis was present in 4 of the 13 diabetic cases. In 7 of the cases the islands of Langerhans were quite normal. In five of the cases there were some fibrosis and hyaline degeneration of the islands. Major remarks that from the present-day text books the student could easily gain the impression that the lesions of the islands are constant and well marked in diabetes. As a matter of fact 54% of the cases of diabetes in his series showed normal islands of Langerhans. Fibrosis of the islands was no more marked in the diabetic than the non-diabetic. In 46% of the cases there was some hyaline degeneration of the islands. This lesion was found in only one non-diabetic case, but curiously enough was more marked in this case than in any of the diabetic ones. In many cases of diabetes there was no anatomical evidence that the disease was due to pancreatic disease.

(29) Tuberculosis in Infants and Young Children.

Martha Wollstein and Fred Bartlett ("American Journ. Diseases of Children," Nov., 1914) have undertaken a study of tuberculous lesions in infants and young children on the basis of 1,320 post-mortem examinations. Tuberculous lesions were found in 178 instances. The ages of the victims varied between 2½ months and three years. Seventy-three of the children were under 12 months of age, and 134 were under two years of age. The authors divide the lesions into two groups, namely, the pulmonary, and the intestinal. Not a single case of tuberculosis limited to the lungs was met with. They point out that this is strong evidence of the tendency of tuberculosis in the young toward rapid generalization rather than localization. From this they deduce that the pulmonary type of tuberculosis in infants is a progressive, and not a retrogressive, process, which leads to early death. Further evidence of the failure of the disease to become localized is adduced from the fact that only nine children of the whole group showed no involvement of the bronchial glands and in only five was the process limited to this situation. They failed to observe any encapsulation in any of the affected glands. A very large proportion of the children falls into the group of primary pulmonary infection, with marked hæmatogenous generalization. In 134 of the 178 children the lesions in the lungs and bronchial glands were older than those in other organs. The lungs were free from tubercular disease in only 14 of the 178 cases. The tendency to calcareous degeneration was extremely rare, but increased with the age of the child. The authors found only one case in which the lesions were limited to the mesentric glands. In 17 of the cases the infection resulted from deglutition. They base this deduction from the fact that the oldest lesions found were those in the mesenteric glands. Sixty-five per cent. of the children were beyond the nursing age, whereas in only 55% of the cases of respiratory infection were the children over one year of age. In the 17 cases of intestinal tuberculosis, the lungs were free five times (including three cases in which the bronchial glands were also free), and in 11 cases the lungs showed miliary tubercles only. Severe intestinal ulceration was found in all the infants under one year of age. From these data the authors deduce that marked generalization is not the rule when the infection is of intestinal

origin. The mesenteric glands were involved in 113 of the children; this was due to generalization from the respiratory focus in all save 17. Meningitis occurred 69 times; in 66 the affection was of pulmonary, and in 3 of intestinal origin. They state that there is a marked tendency to rapid and general dissemination of tubercular lesions in infants less than one year of age. The survival of a young infant infected with tubercle for more than six months is rare. They did not meet with a single instance of a healed tubercular lesion. Attempts at healing, as evidenced by calcified areas, were found 5 times in the lungs, and 13 times in the lymph nodes. Encapsulation was not encountered.

PÆDIATRICS.

(30) Scurvy.

A. E. Wallin (Pædiatrics, Aug., 1914) suggests that scurvy in infants and children is due to an increased alkaline condition of the body, and for various reasons decides against the "toxic," "enzyme," "ferment" and other theories previously brought forward to explain it. In differentiating the condition from rheumatism, trauma, acute poliomyelitis, syphilis, tubercular disease, sarcoma, periostitis, and hæmophilia, reliance is placed on the anæmia, digestive disturbance, constipation, pain and tenderness, and on the nature and location of the swelling on the shafts of the long bones. In addition, the age of the patient, the history of the mode of feeding, the development of the lesions, the discoloration of the gums, a tendency to hæmorrhage and hæmaturia, and the effects of the treatment should be taken into account. The author considers that the hyper-alkaline condition of the intestinal contents is the causal agent in scurvy, because (1) there is usually indigestion with alkaline stools; (2) cooked patent foods, and even mother's milk, may cause an increased alkalinity of the intestinal contents; (3) cooked potatoes and greens increase the acidity, and are antiscorbutic; and (4) alkalines and alkaline foods will not cure scurvy.

(31) Cardiac Arrhythmia in Diphtheria.

Gunson (British Journ. of Children's Diseases Dept., 1914), using a Mackenzie polygraph, obtained 750 polygraphic curves from 120 children under 10 years of age, suffering from definite diphtheria. The author considers it highly important that the varieties of cardiac arrhythmia met with in diphtheria should be recognized. Sinus arrhythmia especially during the period of slow pulse-rate during the second week may produce very marked arrhythmia, and give rise to needless anxiety. Premature auricular contractions occurring singly and infrequenty produce an arrhythmia, unaccompanied by signs of cardiac inefficiency. Patients exhibiting either of these irregularities may, as far as the cardiac condition is concerned, safely be allowed up at the end of the fourth week, and should not be detained in bed on account of the arrhythmia. On the other hand, the arrhythmia associated with the condition known as "cardiac paralysis," a syndrome including cardiac dilatation, galop rhythm on auscultation, and hepatic enlargement, and accompanied in most cases by restlessness, is of very grave significance. Three of five cases presenting this arrhythmia proved fatal. This arrhythmia is due to frequent premature contractions, and is accompanied in some cases by paroxysms of tachycardia. The condition is an indication for absolute rest. Drug treatment is of doubtful value. In summarizing his results, the author states that sinus arrhythmia was constant with pulse rates below 100 per minute. Premature auricular contractions occurring singly and infrequently were present in 28% of cases investigated systematically, and constituted the sole irregularity in mild and moderately severe cases. In three cases fatal from toxæmia no arrhythmia and no heart-block developed. Five patients, including three who died, developed so called "cardiac paralysis" with marked arrhythmia, due to very frequent premature contractions. In two of the cases the premature contractions led up to paroxysms of tachycardia, which in one case was associated with an arrhythmia dependent on a changing a-c interval, which varied from $\frac{2}{5}$ sec. to less than $\frac{1}{10}$ sec. Premature ventricular contractions, auricular flutter, auricular fibrillation and heart-block, apart from a prolonged a-c interval, did not occur in his series of cases. No case of sudden death was met with, and judging fom the more recent literature dealing with cases which have been carefully investigated, sudden or unexpected death is extremely rare.

(32) Tuberculosis in Childhood.

In an investigation of 217 families, Fishberg ("Arch. of Paed.," 1914) found 792 out of 1129 persons under 15 years of age. Of these only 5.5 were artificially fed. Infants suckled by consumptive mothers were usually much under the normal weight, but thrived as well as other children. Many, however, became infected with tubercle. Flat chests occurred in 27.5%, rachitic chests in 10%, enlarged superficial thoracic veins were present in 8%, enlarged cervical glands in 67.8%, and enlarged tonsils and adenoids in 58.6%. A positive von Pirquet reaction was obtained in 7% of infants of 6 months and under. At 14 years 53.79% were found to be affected with tuberculosis. The tuberculous nuclei especially affected children under the age of 4 years, the number affected over the age of 6 years not being increased. The younger the child the more severe and fatal the infection. Generalized tuberculosis is especially common under the age of 2 years.

(33) Influenza in Young Children.

In the examination of 1053 patients in a babies' hospital during the spring and winter seasons of the years 1909 to 1914, Emmett Holt ("Arch. of Ped.," Oct., 1914) found Pfeiffer's bacillus in 28% to 42% of the cases. The organism was usually associated with inflammation of the lower respiratory tract, and occasionally of the nasopharynx and ears. Rarely it possessed a high degree of virulence, and caused general blood infection, meningitis or joint lesions. Several clinical types were differentiated:—(1) Pneumonias with unusual and even extraordinary fluctuations of temperature, or with a persistence of fever after the disappearance of physical signs; (2) pneumonias running a protracted course, with slow resolution, and a tendency to relapse; (3) cases of otitis with very mild catarrhal symptoms, often only a moderate cough, and a few coarse râles in the chest, but associated with fever quite out of proportion to the general or local symptoms; (4) cases with few or no catarrhal symptoms whatever, but with a very unusual temperature curve; (5) unusual temperature curve accompanying tuberculosis, and sometimes other diseases; (6) cases resembling whooping cough, seen chiefly in older children, but not in infants. The diagnosis in these latter cases is difficult. The blood picture in pertussis shows a leucocytosis with a high lymphocyte value; and in influenza the polymorphs are in excess (60%-70%), and catarrhal symptoms are seldom absent. Treatment usually proved useless. Cold fresh air appeared to do harm.

(34) Subacute Atrophy of the Liver.

Dickson ("Amer. Journal of Children's Diseases," Nov., 1914) reports a case of severe jaundice of obscure origin occurring in a child two weeks of age, and persisting without intermission until the death of the child at the age of 5 months. The child grew and developed in a normal manner, and was never acutely ill until within 24 hours of death. When 3 months old the child was found to have an enlarged liver and spleen, but no other abnormalities. The stools were never acholic at any time. The Wassermann reaction was negative. Death was preceded by severe respiratory distress and marked abdominal distension. There were no convulsions. The necropsy showed marked ascites, a small granular liver, a large indurated spleen and large kidneys, with marked parenchymatous degeneration. There was extreme general icterus but no demonstrable stenosis of the bile ducts. Microscopic examination showed complete necrosis of the whole of the liver except a narrow zone round the margin, where there was evidence of regeneration of liver tissue. The main points of interest in the case were (a) the obscure origin of the condition; (b) the remarkably slight effect produced on the growth and development of the child; (c) the persistence of biliary secretion in the presence of extreme destruction of the liver tissue; and (d) the persistence of life, and the absence of evidences of hepatic insufficiency when so small a portion of liver tissue remained.

Contract Practice

XV.

Summary and Conclusions.

In the previous articles on contract practice, an attempt has been made to present the circumstances which have led the medical profession in various countries to adopt a policy for the better regulation of medical attendance on persons who are unable to pay for it at ordinary rates. In every civilized country the primary object of a contract between medical practitioners and the wage-earning section of the community is to ensure skilled medical attention in case of illness or accident without the incurring of an unknown liability. A vast difference exists between the provision of medical treatment without payment in a hospital or other charitable institution for the poor or those who are unable to make provision for treatment and contract practice. It is therefore necessary that the contract shall not be oppressive, and that while a certain risk is borne by the medical officer, this risk shall be proportionate to the premiums paid. In the case of national insurance, the provident principle is enforced on all persons earning a wage not exceeding a fixed amount. This expedient became necessary in Great Britain because the wage-earning population was not uniformly provident, and because a very large section of the community did not make any provision for medical treatment in case of illness or accident, and a considerable proportion did not receive any skilled treatment at all. The effect of the National Insurance Act was to provide medical treatment for minor ailments for approximately 14,000,000 persons, and consequently to guarantee payment at a reasonable rate for this class of medical attendance. The financial gain to the profession as a whole cannot be denied. On the other hand, the weakness of the scheme lay in the fact that the charitable institutions are utilized for the purpose of providing surgical and medical treatment in serious cases without any direct or indirect remuneration.

In Australia the conditions are different from those obtaining in England prior to the introduction of the National Insurance Act. The masses are more prosperous. The great majority of the wage-earners have grasped the opportunity of insuring against the cost of sickness or accident by joining a Friendly Society voluntarily. There is no need for a compulsory insurance in the Commonwealth, at all events not at present. But there is need for a control of the Friendly Societies to prevent abuse of the system by those who are in affluence, and to regulate the conditions under which Lodge practice should be conducted. The "British Medical Association," through its six Australian Branches, has formed a policy for this purpose. The policy is embodied in the principles that a reasonable income limit shall be imposed for the members of the Friendly Society Lodges, which may be varied in case of hardship, that the remuneration shall be commensurate with the work done, and with the status of the men employed, and that the medical profession shall retain a controlling power over professional matters. Last week the common forms of agreement, containing the detailed regulations for the carrying out of these principles were published side by side.

The history of contract practice in the Commonwealth demonstrates very forcibly the necessity for the adoption of uniformity of agreement. The members of the profession, with but few exceptions, have recognized that unless the minimum demands were insisted upon for all practitioners undertaking Lodge practice, the abuse of the system would continue and possible grow. There is no doubt that the medical profession is of one mind in regard to this point. From what has been stated concerning the negotiations with the federations of Friendly Societies in the various States, it is clear that the terms put forward by the medical profession are moderate and equitable, and at the same time suffice in the majority of instances to yield to the medical officer a fair return for services rendered.

The principle of uniformity being admitted, and the fact not being disputed that the defects of the system followed in the past are identical all over the Commonwealth, it follows that the existence of six different forms of agreement is a little illogical. It is true that the principles governing all these forms are the same. The agreements should be regarded as safeguards for patient and for doctor alike, and the best safeguard that can be devised should be the only one in use. It therefore follows that it would be greatly to the advantage of the public and of the medical profession if the Branches would agree to one common form of agreement, and if that form of agreement were substituted for the six now in existence. Some little difficulty might be experienced in determining the best terms and conditions. But with good will, six draft forms already in working order, and the machinery of the Federal Committee of the British Medical Association, the difficulty could be overcome.

In view of the democratic nature of the constitution of the British Medical Association, the moulding of the form must be carried out by its members. Experience and commonsense would guide the members to come to the wisest decisions; in this they would have the benefit of guidance from the Branch Councils. Some members have studied these questions more carefully than others, and the guidance and advice of these members should be offered and accepted in this vital matter. Under the circumstances, it would be inadvisable to discuss details in this place in connexion with what might be regarded as an ideal form of agreement. A few suggestions may be made in these columns, but these suggestions must be regarded as nuclei for discussion and not as proposals for inclusion in any form of agreement.

In the first place, the Federal Committee could be entrusted with the redrafting of one or other form of agreement selected as the best, if the members determined that alterations were required. So much depends on the proper wording of the individual clauses of an agreement that no happy result could be attained if six Branch Councils or 2500 members attempted the task. The question of broad principles should be settled, and if the existing ones were confirmed the minor points of detailed regulations could be arranged by the opinions of the majority, ascertained by the Branch Councils in each State.

The question might be considered whether the principle of free choice of doctor in the sense that every medical practitioner desirous of undertaking contract practice in the district in which he resides should be able to act for any local Lodge, might be weighed. It is possible that in accord with the common forms existing at present this free choice of doctor would be limited to medical practitioners who are eligible for membership of the British Medical Association. Another point that one or other Branch Council might submit to the members and recommend to the Federal Committee would be the optional substitution of payment for services rendered for the capitation system. The question of the pooling system is at present being considered in Warwick, and all the other methods of remuneration might be passed in review before any one is excluded. There are many other suggestions which might be made, but no doubt these will be brought forward if the Branches adopt the expedient of entrusting the Federal Committee with the task of drawing up one uniform memorandum of agreement to apply throughout the whole Commonwealth.

The work of the British Medical Association in Australia in regard to Lodge practice has already borne good fruit in improving the standard of treatment accorded, and in establishing amicable relations between the members and the medical officers. The happy relations are required all the more urgently at present, if the suggestion of the introduction of an insurance bill be realized. Both the medical profession and the Friendly Societies will wish to resist this bill, and against such opposition no Government could make headway.

A Correction.

Our attention has been drawn to a slight inaccuracy in the account published of the history of Lodge Practice in Toowoomba, Queensland (see "Medical Journal of Australia," January 2, 1915, p. 14). We pointed out that in the period immediately preceding 1897, four doctors were holding the lodge appointments for which they were paid 25s. and 30s. per annum to include medicine, but not medicine bottles. This statement was made on the authority of a letter written by a prominent medical man who was

conversant with the conditions, and dated May, 1902. Further enquiries have brought to light the following facts: The Hibernian Order paid 24s. and 30s. for single and married members respectively; the Rechabites paid 24s. for married and single members; the G.U.O.O.F. and the Protestant Alliance paid 20s. for single and 28s. for married members. In each case medicine was included.

British Medical Association News.

SCIENTIFIC.

A meeting of the Western Australian Branch was held on November 18, 1914, at the Perth Public Hospital, Dr. Lotz, the President, in the chair. Dr. F. A. Hadley read a paper on the "Early Treatment of Abdominal Gun-shot Wounds in Modern Warfare" (see page 95).

Dr. Lotz, in thanking Dr. Hadley for his interesting paper, stated that much that was learned in civil practice could be applied to the conditions of the battlefield. For example, he had obtained excellent results from drainage in cases of ruptured, gastric, and duodenal ulcers. He shared Dr. Hadley's opinion that Fowler's position was preferable to the lying down position. The form of drainage suggested in the paper could be warmly commended.

Dr. Paton stated that although several years had passed since he had been connected with the A.M.C., he had listened to Dr. Hadley's paper with great interest. A marked improvement in the equipment and personnel of field ambulances had been effected since the time when he was associated with military work. He was of opinion that if Fowler's position were adopted by the military medical authorities, better results in cases of abdominal wounds would be achieved. He expressed the hope that Dr. Hadley's proposals would be carried into practice.

Dr. Trethowan admitted that he had had no experience of military surgery, but had been none the less interested in Dr. Hadley's paper. He questioned whether a field ambulance could cope with such very large numbers of wounded as were being admitted in the hospitals in the present war. It would be a great temptation to the surgeon on opening the abdominal cavity to go on and do all that was possible for the patient at the time, instead of restricting himself to the insertion of a drainage tube, as Dr. Hadley had suggested. This would mean that a great deal of time would be expended on each case, with the result that some patients would be neglected. Not every surgeon was a fast operator; the average man would therefore be able to attend only a comparatively few patients in the field ambulance. He agreed with Dr. Hadley in his recommendation of Fowler's position. It might be advisable to construct stretchers provided with a back-rest. No doubt many of the wounded would do quite well without submitting them to the preliminary operation suggested. The question was whether by doing too much the trouble would not be increased instead of relieved. Bandages would tend to become loose in transit. Moreover, if a drainage tube were inserted, the dressings should be changed frequently within the first twenty-four hours. This would be impossible if the patient were to be transported immediately. The speaker considered that Dr. Hadley had shown great originality and that his communication was most interesting. It was founded on practice—not on theory alone, since Dr. Hadley had served with the ambulance in the Boer War.

Dr. Holland enquired the size of the preliminary dose of morphine. He also asked for information in regard to the proportion of abdominal to other wounds.

In his reply, Dr. Hadley thanked the members who had critized his paper. He appreciated the difficulty mentioned by Dr. Trethowan of stopping once the abdomen was opened until everything possible had been done. This difficulty certainly constituted a drawback to the treatment suggested. In regard to the number dealt with, one field ambulance was provided for every 4000 men. If one brigade were being pushed hard, the reserve of another brigade not so severely tried would be drawn on. When possible, a portion of each ambulance is kept in reserve to be drawn on as the occasion might require.

In reply to Dr. Holland, he stated that the dose of morphine which he would recommend was ½ grain. The proportion of abdominal to other wounds varied with the nature of the action and the position of the men. During an advance a proportionately large number of abdominal wounds were received.

Public Health.

SMALL-POX IN SYDNEY.

The number of small-pox cases reported to the Department of Public Health, New South Wales, for the week ending January 24, 1915, was:—

	Cases.
City of Sydney and Metropolitan District	3
Country—Newcastle	2
Total	5

THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, for the week ending January 21, 1915:—

Area.	Diphtheria. Cs.	Diphtheria. D'ths.	Scarlet Fever. Cs.	Scarlet Fever. D'ths.	Enteric Fever. Cs.	Enteric Fever. D'ths.	Pulmonary Tuberculosis. Cs.	Pulmonary Tuberculosis. D'ths.
Metropolitan.	29	—	4	—	3	2	20	14
Rest of State	25	2	4	—	43	1	16	3
Whole State.	54	2	8	—	46	3	36	17

The following notifications have been received by the Department of Public Health, Victoria, for the quarter ending December 31, 1914:—

District.	Enteric Fever. Cases.	Diphtheria. Cases.	Scarlet Fever. Cases.	Pulmonary Tuberculosis. Cases.
Metropolitan	49	440	74	295
Ballarat	24	30	5	11
Bendigo	18	131	1	17
Geelong	5	13	—	7
Rural	121	325	26	147
Whole State	217	939	106	477

The following table shows the notifications of infective diseases for the years 1910-1914:—

Year.	Enteric Fever. Wh'le State. Cases.	Enteric Fever. M'tro-p'tan. Cases.	Diphtheria. Wh'le State. Cases.	Diphtheria. M'tro-p'tan. Cases.	Scarlet Fever. Wh'le State. Cases.	Scarlet Fever. M'tro-p'tan. Cases.	Pulmonary Tuberculosis. Wh'le State. Cases.	Pulmonary Tuberculosis. M'tro-p'tan. Cases.
1910	2124	689	2415	1655	1154	752	1487	928
1911	1303	368	5120	3035	442	307	1407	879
1912	1122	272	5289	2541	492	190	1327	803
1913	1127	282	5367	2412	243	151	1376	780
1914	1195	312	4868	2164	389	289	1410	856

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, for the week ended January 16, 1915:—

Notifiable Diseases.	No. of Cases.
Diphtheria	16
Cerebro Spinal Meningitis	2
Infantile Paralysis	6
Varicella	1
Scarlet Fever	4
Enteric Fever	17
Puerperal Fever	1
Erysipelas	1
Phthisis	3
Total	51

INFECTIVE DISEASES IN WESTERN AUSTRALIA.

The notifications received by the Department of Public Health, Western Australia, for the week ending December 5, 1914, were:—

	Enteric Fever.	Diph-theria.	Scarlet Fever.	Phth-isis.	Erysi-pelas.	Beri Beri.
Fremantle, East	—	2	—	—	—	—
Subiaco	—	2	—	—	—	—
Leederville	1	—	—	—	—	—
Perth	1	3	—	—	—	—
Bayswater	—	1	—	—	—	—
Guildford, West	—	1	—	—	—	—
Midland Junction	—	3	—	—	—	—
Kalgoorlie	4	2	—	1	—	—
Boulder	—	—	—	4	1	—
Kalgoorlie Road Dt.	1	1	—	—	—	—
Kondinin	1	—	—	—	—	—
Bruce Rock	1	—	—	—	—	—
Broome	—	—	—	—	—	8
Yillinning	2	—	—	—	—	—
W. Narrogin	—	1	—	—	—	—
Collie	1	1	—	—	—	—
Geraldton	—	—	1	—	—	—
Korrigin	1	—	—	—	—	—
Bellevue	2	—	—	—	—	—
	—	—	—	—	—	—
	15	17	1	5	1	8

The notifications received by the Department of Public Health, Western Australia, for the week ending December 12, 1914, were:—

	Enteric Fever.	Diph-theria.	Scarlet Fever.	Phth-isis.	Erysi-pelas.	Beri Beri.
Fremantle	—	—	—	1	—	—
Cottesloe	—	2	—	—	—	—
Claremont	—	1	—	—	—	—
Subiaco	—	1	1	1	—	—
Leederville	2	1	—	—	—	—
Perth	1	—	—	1	—	—
Perth, North	—	—	—	2	—	—
Maylands	—	1	—	—	—	—
Midland Junction	1	—	—	—	—	—
Victoria Park	1	—	—	—	—	—
Kalgoorlie	2	—	—	—	—	—
Boulder	2	—	—	3	1	—
Brownhill	—	—	—	1	—	—
Carnarvon	1	—	—	—	—	—
Coolgardie	—	1	—	—	—	—
Ora Banda	1	—	—	—	—	—
Holyoake	1	—	—	—	—	—
Collie	—	1	—	—	—	—
Osborne Park	—	1	—	—	—	—
Gosnells	—	1	—	—	—	—
S. Fremantle	1	—	—	—	—	—
E. Perth	1	1	—	—	—	—
Goomalling	—	1	—	—	—	—
Goongarra	—	—	—	1	—	—
Yilliminning	1	—	—	—	—	—
Norseman	—	2	—	—	—	—
Redcliffe	—	1	—	—	—	—
Broome	—	—	—	—	—	1
	—	—	—	—	—	—
	15	15	1	10	1	1

The notifications received by the Department of Public Health, Western Australia, for the week ending December 19, 1914, were:—

	Enteric Fever.	Diph-theria.	Phth-isis.
Fremantle Road Dist.	—	1	—
Peppermint Grove	—	2	—
Cottesloe Beach	1	—	—
Claremont	—	1	—
Subiaco	3	—	—
Leederville	3	—	—
Perth	3	1	2
Guildford	1	—	—
Belmont	1	—	—
Victoria Park	1	—	—
Kalgoorlie	2	—	—
Boulder	—	1	—
Pinjarra	1	—	—
Southern Cross	—	—	1
Narrogin	—	1	—
Kellerberrin	—	1	—
Dowerin	—	—	1
Lion Mill	—	1	—
Amphion, via Holyoake	—	1	—
	—	—	—
	17	10	4

The notifications received by the Department of Public Health, Western Australia, for the week ending December 26, 1914, were:—

	Enteric Fever.	Diph-theria.	Phth-isis.	Erysi-pelas.
Fremantle	—	3	—	—
Fremantle Road Dist.	—	2	—	—
Cottesloe	—	1	—	—
Claremont Road Dist.	1	—	—	—
Subiaco	1	—	—	—
Perth	2	—	2	—
Leederville	2	—	—	—
Bayswater	—	1	—	—
Midland Junction	1	—	—	—
Kalgoorlie	2	—	—	1
Boulder	—	2	1	—
Kalgoorlie Road Dist.	1	—	—	—
Coolgardie	—	1	—	—
Collie	1	—	—	—
Marvel Loch	—	—	1	—
Narrogin	—	1	—	—
Armadale	—	1	—	—
Holyoake	1	—	—	—
	—	—	—	—
	12	12	4	1

The notifications received by the Department of Public Health, Western Australia, for the week ending January 2, 1915, were:—

	Enteric Fever.	Diph-theria.	Scarlet Fever.	Erysi-pelas.
Fremantle	—	—	1	—
Fremantle North	—	1	—	—
Claremont	—	—	—	1
Subiaco	1	—	—	—
Leederville	3	—	—	—
Perth	5	1	—	—
Maylands	1	—	—	—
Bayswater	1	—	—	—
Guildford	1	—	—	—
Midland Junction	1	—	—	—
Kalgoorlie	—	1	—	—
Bellevue	2	—	—	—
Burswood	1	—	—	—
Narrogin	2	—	—	—
Collie	—	1	—	—
	—	—	—	—
	19	4	1	1

HEALTH OF THE METROPOLIS OF SYDNEY.

The mortality return for December, 1914, as supplied by the Government Statistician, shows that 647 deaths occurred in the metropolis of Sydney, including 26 deaths of individuals previously resident outside the metropolis, and deaths classified as taking place in the islands and shipping in the Harbour.

Calculated on an estimated population of 725,400, the death-rate for the month is equivalent to an annual rate of 10.7 per 1000 of the population. Deducting the deaths of persons non-resident in the metropolis, in the mental hospitals of Leichhardt and Hunter's Hill (Callan Park and Gladesville), and adding the deaths of persons resident in the metropolis occurring at the Benevolent Asylums, Mental Hospitals and Consumptive Sanatoriums, situated outside the metropolis, the number of deaths was 624, which is equivalent to a corrected annual death-rate of 10.32 per 1000. Among children under one year of age, 146 deaths were recorded for the metropolis.

There were 1720 births during the month of December, giving the satisfactory rate of 28.45 per 1000 of the population, being 4% above its average for the previous five

years. The infantile mortality rate was 87 per 1000 births. The drop in the rate is gratifying, being 19% below the average for December of the previous five years.

Infective diseases were responsible for 16 deaths, of which 6 were due to enteric fever, 3 each to pertussis and puerperal fever, and one each to morbilli, diphtheria, erysipelas and cerebro-spinal fever.

Diarrhœal diseases were accredited with 77 deaths, phthisis caused 44 deaths, cancer 61, diseases of the heart and blood vessels 58, Brights' disease 41, accident or negligence 34.

Compared with the average in December for the previous five years there were increases in the number of deaths from Bright's disease, cancer and senility, with decreases in infective diseases, diseases of the heart, diarrhœa, and enteritis and pulmonary diseases.

One hundred and seventy-one cases of scarlet fever, 145 of diphtheria, and 66 of enteric fever were notified during the month of December, 1914. Twelve cases of pulmonary and laryngeal tuberculosis were notified under the City Council's by-laws, and 7 premises were disinfected by the Council's trained staff after the death or removal of the patients.

T. M. SUCKLING,
Acting Medical Officer of Health.

THE HEALTH OF SYDNEY.

Annual Report for 1913.

The Medical Officer of Health for Sydney has issued his annual report for the year 1913, in a document dated July 20, 1914, and issued in the second week of January, 1915. The reason for the delay is probably to be found in the absence of Dr. Purdy from Australia with the first expeditionary force. He introduces his report with an abstract from the Statistician's returns of births and deaths. The birth-rate for the year was 28.92 per 1,000 of population. This rate affects the population of the metropolis proper, which was estimated by the statistician to be 725,490; 115,900 persons are said to have been resident in the city, and 609,500 in the metropolitan area. In comparing the birth-rate of 1913 with that of 1912, Dr. Purdy suggests that the introduction of the Maternity Bonus Act during the last quarter of 1912 was responsible for an earlier registration than in previous years, and consequently a larger number of registrations in that year. The number of illegitimate children born was 1,522, or 7.41 of the total number of births. In 1911 the percentage of illegitimacy was 9.42, and in 1912 8.18. No instances are drawn from this fact.

The number of deaths of residents in the metropolitan area registered in 1913 was 7,640, as compared with 7,879 in 1912. The corrected death-rate worked out at 11.33 per 1,000. Dr. Purdy neglects to compare this figure with the corrected death-rate for the previous year.

Scarlatina.

During the year 555 notifications of scarlatina were received. The highest attack rate was in the Ryde district, where 6.32 per thousand of the population were attacked. In Drummoyne the attack rate was 4.04 per 1,000. In the city, where 108 cases occurred, the attack rate was only 0.01.

Twelve deaths took place, which is equal to a death-rate of 0.02 per 1,000 of population. The attack rate for the whole of the metropolis was 0.79. In 1898 it was 5.37, and in the period from 1899-1908 it varied between 0.98 and 5.77. Since 1910 the attack rate has been comparatively low. The case fatality for the year 1913 was 2.16%. The highest record since 1898 was 3.03% in 1902, and the lowest was 0.81% in 1911.

The cost of the institutional treatment of scarlatina and other zymotic diseases in New South Wales is borne by the State. In Sydney the patients are removed to the Coast Hospital, and no private or paying accommodation for infective cases is provided.

Diphtheria.

The incidence of diphtheria in the metropolis was high during the year 1913. During the previous 16 years the number of cases notified—2041—was only exceeded on two occasions, viz., in 1910, when there were 2,109, and in 1912, when there were 2,632. Previous to 1908 the attack rate varied between 0.66 per 1,000 of population and 1.43. In 1908 it was 1.53, in 1909 it was 1.93, in 1910 it was 3.47, in 1911 it was 2.86, in 1912 it was 3.92, and in 1913 it was 2.89.

Ninety-six deaths from diphtheria were registered during the year. This number is equal to a case mortality of 4.7%. The highest case mortality recorded was 14.82% in 1901, and the lowest 2.89% in 1910. In 42 instances the diphtheria was associated with scarlatina. No mention is made of an association of diphtheria with morbilli, a combination which is frequent in London, and is highly dangerous.

Dr. Purdy records a few instances in which it was found possible to trace the source of the epidemic. In one case it was found to be necessary to close a dairy on this account. No record is appended of the day of the disease on which the patients were admitted to hospital, nor of the day of the disease on which antitoxin was injected. The Department should have but little difficulty in collecting information of a most valuable nature in regard to the value of diphtheria antitoxin in the treatment of the disease. In the "Medical Journal of Australia" of October 17, 1914, Dr. Litchfield gave a very valuable analysis of 62 cases of diphtheria which ended fatally. This account should be supplemented by an accurate record of the conditions obtaining in regard to the 1,117 patients who were treated for the disease during the year in hospital.

Enteric Fever.

A morbidity curve of enteric fever in the metropolis of Sydney during the past 16 years would reveal a general tendency toward the basal line. There have been three exacerbations in 1900, 1903, and 1910, while the corresponding lowest points were reached in 1902, 1906 and 1911. A straight line interpolated on the curve would show a reduction of incidence from 900 to 600.

Enteric fever was most prevalent in January, February, March and April. Fifty-nine persons died of the disease during the year. This is equivalent to a case mortality of 10.42. It is remarkable that the case-mortality during the 16 years has only varied within the narrow limits; the average was 10.28, while with the exception of 1898 and 1906 the extremes were 9.62 and 11.5. Greater fluctuation is evident in regard to the attack-rate. In 1913 the attack-rate was 0.81 per 1,000 of population; in 1911 it was 0.76, and in 1900 it was 2.25. While 375 of the patients were treated in hospitals only three nurses were infected. Dr. Purdy speaks of the transference of infection from person to person in these cases. It is not clear whether the facts justify this deduction. It is possible that the infection may be carried directly or indirectly from the excretions of the patient to the nurses' hands or to food. A few outbreaks were investigated from an epidemiological standpoint. In one case in the neighbourhood of Rose Bay it was discovered that the bedroom slops were disposed of on the ground adjoining the houses. Dr. Purdy has come to the conclusion that contamination of sand with urine and slop water from washing of the clothes of patients were the main sources. The contaminated material was, in his opinion, disseminated by flies and by the blowing about of the sand. The conditions obtaining in regard to an outbreak at the railway contractors' camp is dealt with at some length. The unhygienic state of the immediate surroundings of the tents accounted for the spread of the infection. The nuisance was dealt with. In this connexion mention is made of the number of houses connected up with the sewage system during the year. On December 31, 1913, 15,601 houses were connected, 4,963 of which were connected during the year.

Tuberculosis.

Since 1904 notification of pulmonary tuberculosis and of laryngeal tuberculosis (the term *phthisis* is unfortunately still employed to signify these conditions) has been in force in the city of Sydney. The data, however, cannot be used for the purpose of ascertaining the extent of infection, partly because of the 656 cases notified during the year within the city upwards of 391 affected persons were resident outside the limits of the city. In the metropolitan area 621 deaths from pulmonary and laryngeal tuberculosis occurred in 1913. This number is higher than the number

of deaths in any one year since 1903. In 1909 458 persons died of these conditions, and in 1903 589 persons died. The number of deaths from all forms of tuberculosis during 1913 was 683.

The prophylactic measures carried out by the City Health Officer included the instruction of 249 patients in regard to the disposal and disinfection of sputum, soiled handkerchiefs, etc., and in regard to other means necessary for the safeguarding of the public. In 39 instances premises were disinfected after the death, and in 121 after the removal, of the patient. A number of patients received treatment at the Royal Prince Alfred Hospital, and at the Anti-Tuberculosis Dispensary; 216 patients were visited by the nurse inspector in their own homes. In view of the enormous importance of tuberculosis, and of the manifold measures adopted all over the world for its prevention and cure, the conditions in Sydney cannot be regarded as satisfactory. The Medical Officer of Health would perform a useful service were he to include a full analysis of the etiological factors discovered in each case, of the prophylactic measures employed to check the infection, of the subsequent histories of patients found to be suffering from the disease, and of all the other work undertaken by private and public bodies in the campaign against tuberculosis.

Anterior Poliomyelitis.

During the year 1913, 32 cases of this disease have been notified within the metropolitan area. In the previous year 28 cases were notified. The patients were children up to the age of 6 years. Dr. Purdy states: "It is now believed that the virus belongs to a class of highly resistent organisms similar to those causing rabies and vaccinia, capable of passing through the finest filter, but beyond the range of the most powerful microscope." This sentence is so misleading that it should not be allowed to pass without correction. Dr. Alan Green has shown that the virus of vaccinia is not a filter passer. Sir John McFadyen issued a warning at the International Congress of Medicine held in London in 1913 against the acceptation of evidence of filterability. It is by no means certain that the virus of rabies is a filter passer. The experiments of Professor Flexner certainly suggest that the virus of anterior poliomyelitis is capable of passing through a close filter, but there is some evidence in favour of this virus belonging to the group of protozoa. The use of the word "but" in Dr. Purdy's sentence is misleading. The smaller the organism the more easily will it pass through the filter, and at the same time the more difficult will be its recognition under the miscroscope. He states that it is known that *Stomoxys calcitrans* is capable of transmitting the disease from the sick to the healthy. As far as we are aware, definite proof of this form of transmission has not yet been adduced.

Infantile Mortality.

The next chapter contains an analysis of the causes of death affecting children under one year of age. During the year 1,592 children under one year of age died within the metropolitan area. The infantile mortality rate per 1,000 births was 77. In 1911 it was 71, and in 1912 76. During the period 1880-1910 the infantile death-rate decreased from 192 to 82; 474 deaths were due to diarrhœa and enteritis. In 1912 the number of deaths from these diseases was 523, in 1908, -09, -10, and -11 it was 430, 408, 378 and 350 respectively. Prematurity accounted for 398 deaths, and developmental diseases for 294. Pertussis killed 83 infants, as did pneumonia. In 1908 only one child died of pertussis; in 1909 three died; in 1910 61 died; in 1911 42 died; and in 1912 30 died. The Medical Officer of Health does not offer any explanation for these figures, neither does he discuss their significance. Thirty-nine infants died during the year of bronchitis, 17 of meningitis, 14 of diseases of the stomach, and 13 of tubercular meningitis.

The nurse inspector visited 1,463 newly-born infants in the city during the year. Under her direction 90.4% were entirely breast fed, 5.8% were partially breast fed, and 4.2% were artificially fed. Upwards of 2,317 infants were visited in the more populous districts of the metropolitan area. In 91% of these infants breast feeding was carried out, while in 7.5% *allaitement mixte* was employed. The utility of this department was limited by the fact that the "Registration of Births Act" permits registration to be made within 60 days of birth. Dr. Purdy recommends the introduction of fresh legislation on the lines of the "Early Notification of Births Act" of Great Britain.

General Sanitation.

Among the dwellings inspected during the year 171 were found to be in an insanitary condition. Inspection of garbage depôts, nightsoil depôts, drains and sewers, etc., were carried out. As has been reported in the daily and medical press, the subject of garbage disposal has occupied the attention of the authorities. Brief references are made to the extension of the sewerage system, to the installation of septic tanks, to the control of cemeteries, and to other kindred matters. One hundred and twenty-five private hospitals for the reception of medical, surgical and obstetric cases were registered.

Under the "Pure Food Act of 1908" a large number of samples of milk and other foodstuffs were collected and examined; 28 prosecutions were undertaken, and in each case a conviction was obtained. Very little information is given in regard to the kind and extent of the adulteration or deterioration. Four prosecutions were instituted under the "Dairies Supervision Act," and a conviction obtained in each case.

The final chapter of the report deals with administration. A number of tables and a few plotted curves are published as appendices.

Vital Statistics.

VITAL STATISTICS OF SYDNEY AND NEWCASTLE.

The Metropolitan returns of births and deaths for December, 1914, have been issued in the New South Wales Government Gazette, dated January 14, 1915.

The number of births for the month were 1,720. This represents an increase of 67 above the average for December of the previous five years. The birth-rate per 1000 of population was 28.45 per 1000 of population. There were 113 illegitimate births; the average number in December of the previous 5 years was 140. 647 deaths were registered during the month. This was 69 less than the average number registered in December of the previous five years. The death-rate per 1000 of population was 10.70, as compared with 11.84. There were 87 deaths of infants under one year of age per 1000 of population as compared with 108. In regard to the causes of death, cancer shows an increase of 20%, Bright's disease an increase of 28%, developmental diseases of infants one of 18%, and senility one of 15%. In regard to zymotic diseases, enteric fever was responsible for 6 deaths, pertussis for 3 deaths, diphtheria and rubeola one each. Of 47 deaths due to tuberculosis, 40 were caused by phthisis. The average number in December of the previous five years was 41. Cancer caused 65 deaths. The distribution of the new growth was as follows:—Cancer of the mouth, 4 cases, of the stomach and liver 23 cases, peritoneum, intestines and rectum 15 cases, breast 6 cases, female genital organs 7 cases, skin 2 cases, other organs 8. Diabetes caused 3 deaths; apoplexy 20; 37 persons died of organic diseases of the heart; 2 deaths were due to aneurysm; embolism and thrombosis accounted for one death. Under respiratory diseases pneumonia is stated to have been responsible for 16 deaths, and broncho-pneumonia for 9 deaths. 79 deaths were due to diarrhœa and enteritis; 57 affecting infants under one year. Hernia and intestinal obstruction accounted for 7 deaths, and appendicitis for 6. 43 deaths were due to Bright's disease, and 3 to acute nephritis. Puerperal septicæmia resulted in 3 deaths. Deaths in early infancy were due to congenital debility, icterus, sclerema, in 16 instances, premature birth resulted in 36 deaths, and three deaths occurred as the result of injury at birth.

The returns for the district of Newcastle for the month of December, 1914, are also appended. The births numbered 175; this represents a rate of 3.04 per 1000 of population. During the month 67 persons died, which gives a death-rate of 1.16 per 1000. 20 of the deaths occurred in public institutions. The births are 28, and the deaths 1 above the mean number for December during the previous five years. Of

33 enteric fever patients, 2 died; no deaths occurred among the diphtheria or scarlatina patients, 15 and 28 cases of these diseases having been notified.

Diarrhœa and enteritis were responsible for 14 deaths, cancer for 6, accident for 7, diseases of the heart and Bright's disease 5 each.

During the quarter ending December 31, 1914, 5,127 births, and 1,740 deaths were registered in the Metropolis of Sydney. How many of the persons were usually resident in the State is not stated. The birth-rate was 7.07 per 1000 of population, and the crude death-rate 2.41 per 1000. The birth-rate was 2.2 below the average for the quarter in the preceding five years. The death-rate was 14.5% below the corresponding average. Deaths from enteric fever numbered 12, as compared with 15, the quinquennial average for the corresponding quarter for the period 1909-13. The deaths from diphtheria were 7 as compared with 20. Influenza accounted for 3 deaths, pertusis for 5 deaths, and scarlet fever for the same number. Cerebral hæmorrhage caused 73 deaths. There was a slight decrease in deaths from cancer, from 167 to 164. There was a marked decrease in the mortality from diarrhœa and enteritis, from 266 to 144. There were 130 deaths from Bright's disease, 124 from organic heart disease, 110 from pulmonary tuberculosis, 91 from pneumonia, 87 the result of accidents, 75 from premature birth, and 71 from senility. It is gratifying to note that a considerable reduction of the mortality from pulmonary tuberculosis is recorded, the average number of deaths during the corresponding quarter in the quinquennial period being 125.

During the quarter ending December 31, 1914, there were 500 births registered, and 190 deaths in the Newcastle district. The birth-rate was 8.67 per 1000 of population, while the death-rate 3.30 per 1000. Death was due in 27 instances to diarrhœa and enteritis, to cancer in 16, to developmental diseases of infants in 15, heart diseases in 14, pneumonia in 12, accident in 12, cerebral hæmorrhage in 9, Bright's disease in 8, and senility in 8 instances.

Naval and Military News.

Enquiries are made from time to time by members of the various Branches of the British Medical Association as to whether the Federal authorities are seeking volunteers for the medical units of contingents destined for the front. A public announcement has recently been made in regard to voluntary hospitals, and the significance of this announcement has been variously interpreted. It appears that at present the Director-General of Medical Forces has a long list of competent men willing to serve should they be required to do so. It is probable that fresh field units will be dispatched to the various countries in which the Imperial troops are engaged. Medical officers will be required for these units, and others may be required for reinforcements and to replace those rendered *hors de combat*. On the other hand, it is improbable that any large number of medical men will be called upon to accept service during the next few months, and preference will certainly be given to those who have had experience with the Royal or Australian Army Medical Corps. Failing old A.M.C. men, young and active practitioners will be selected from among the volunteers.

The hospital and ambulance arrangements in France and England are satisfactory at the present time. Ample accommodation is provided for the sick and wounded, and the Imperial authorities have determined not to accept any further voluntary hospitals. We presume that some difficulty may have been experienced in connexion with some of the nursing arrangements in England. A correspondent informs us that the War Office is suffering from the solicitations of titled ladies of great keenness but limited skill as nurses, and it may be that the personal charms and social influence of some of these fair ladies may have led to embarrassment. It is possible that some discontent and consequent lack of smooth working may arise from the fact that a considerable number of the officers attached to the Australian medical units and Australian field, clearing, and general hospitals are men of mature years and considerable experience, who might regard the action of the War Office with disfavour if they were detailed for service in situations other than in the thick of the fighting. To utilize experience in places where there is little to do might appear like throwing away good material. Be this as it may, the fact remains that no further voluntary hospitals will be allowed to receive the wounded.

ENTERIC FEVER IN THE BELGIAN ARMY.

In a leter to the "Times," dated November 29, 1914, Major H. Stedman, R.A.M.C., reported that they were being threatened with an epidemic of typhoid fever, which, if left to develop, would sweep away the remains of the Belgian Army and, incidentally, carry a large part of the civil population in West Flanders and North-eastern France with it. He received between 20 and 30 fresh cases daily. In addition, he spoke of a case of typhus. As a remedy, he suggested a hospital ship to deal with the patients then in Calais, and a hospital in Belgium, near the sea, to contain about 600 beds. The War Office has been acquainted with the facts, and the proposals of Dr. Stedman have been submitted to it.

We learn that the New Zealand Branch of the British Medical Association has issued an appeal for funds to establish and equip a military base hospital at Trentham. The fund has been augmented by £50 voted by the Westland Racing Club. It is stated that the Club has subscribed for the purpose of assisting the Branch in providing increased hospital accommodation for New Zealand soldiers. It is hoped to relieve the Wellington Public Hospital and at the same time to provide immediate hospital accommodation for the camp at which upwards of 3600 men are in training.

According to the "Daily Telegraph" of Sydney, of January 15, 1915, the Premier has received the following Army Order from London dealing with anti-typhoid vaccination. The order has been issued by General Sir Bruce Hamilton:—

> "The general officer commanding desires to impress upon all officers, non-commissioned officers, and men of the first army, the vital importance of inoculation against typhoid fever. The following are strong reasons why all ranks should be inoculated against typhoid fever:—
>
> "In the South African War there were 57,000 cases of typhoid fever, of which 8000 died, more than were killed by the enemy.
>
> "In India the deaths from enteric fever used to be 800 and more a year. Now 93 per cent. of the troops are inoculated, and the deaths from typhoid have fallen to less than 20 a year.
>
> "In the United States army, where inoculation is now compulsory, out of 90,000 men, last year there were only three cases.
>
> "Typhoid fever is five or six times as common in the non-inoculated as in the inoculated."

The following appointments have been gazetted:—

1st Military District.

Australian Army Medical Corps—

Malcolm Leslie Cameron and Norman Walter Markwell to be Captains (provisionally and temporarily).

Captain J. F. G. Luther (seconded), to be Major.

The provisional appointment of Captain (temporary Major) A. M. McIntosh is confirmed.

Australian Army Medical Corps Reserve—

John Hardie to be Honorary Captain.

Honorary Captains A. C. MacKenzie and R. Wallace are transferred to Australian Army Medical Corps and to be Captains (provisionally and temporarily).

2nd Military District.

Australian Army Medical Corps—

James George Edwards and John Charles Campbell to be Captains (provisionally and temporarily).

John Bernard Francis McKenzie, Edmund Horatio Barnes, Albert Tange Dunlop, and Walter Frederick Matthews, to be Captains (provisionally and temporarily).

The provisional appointment of Captain N. H. Mummery is withdrawn.

Australian Army Medical Corps Reserve—
Harold Octavius Lethbridge to be Honorary Captain.
3rd Military District.

Australian Army Medical Corps—
Leonard Roy Cook, Percy Alexander Stevens, James Alexander Smeal, Frederick Donald Herbert Blois Lawton, Robert Scott Callander, George Alexander Douglas McArthur, Richard Francis O'Sullivan, Montefior David Silberberg, Edward Rae Cordner, Alexander Peter Drummond, Frank Humphrey Makin, Francis Esmond Keane, Hugh Noel Murray Puckle, and William Allan Hailes to be Captains (provisionally and temporarily).

Australian Army Medical Corps Reserve—
Whitefield de Witt Henty and Edward Bonaventure Heffernan to be Honorary Captains.
4th Military District.

Australian Army Medical Corps—
Frank Burden and John Christian Mayo to be Captains (provisionally and temporarily).
Captain C. T. C. de Crespigny to be Major.
The provisional appointment of Captain E. A. H. Russell is confirmed.

Australian Army Medical Corps Reserve—
Denby DeCourcey Browning, William Heitland Godby, John Clarence Wells, Reginald Blockley Lucas, James Charles Power Strachan, Norman Craig Shierlaw, and Kirke Charles Godfrey to be Honorary Captains.
Captain C. V. Wells and Honorary Captains E. W. Griffiths and H. A. Sweetapple are retired.
5th Military District.

Australian Army Medical Corps—
Keith Maurice Levi to be Captain (provisionally).
Captain A. E. Randell to be Major.
The provisional appointment of Captain O. Paget is confirmed.

Australian Army Medical Corps Reserve—
Edward Rogerson to be Honorary Captain.

The following have been appointed captains to the Australian Medical Corps:—
R. Cook, P. A. Stevens, J. A. Smeal, M. D. H. Lawton, R. S. K. Callendar, G. A. B. M'Arthur, R. F. O'Sullivan, M. D. Silberberg, E. R. Cordner, A. P. Drummond, F. H. Makin, F. E. Hearne, H. N. M. Puckle, W. A. Hales.

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Special Correspondence.

(By our Special Correspondent.)

LONDON LETTER.

Decrease of Crime in England.

The annual report of the Commissioners of Prisons was issued early in October. The number of persons who received sentence in 1913-14 was 151,603, as against 166,023 in 1912-13, a decrease of 14,420. Out of 100,000 of the population, 369.5 were received into the prisons after conviction. This proportion represents a still further decrease on the number for the previous year, viz., 413.1, which marked the lowest point within statistical record. In the past nine years there has been a decrease of no fewer than 61,517 persons received into prison on conviction, and this decrease averages exactly 31% in the case of both males and females. The convictions under the head of begging and sleeping-out has decreased from 24,717 in 1912-13 to 15,019 in 1913-14. Scarcely less significant is the decrease of drunkenness, 51,851 cases, as against 56,718.

Referring to the causes of improvement, the Commissioners say: "We referred last year to the need for caution in drawing deductions from statistics of imprisonment, but the remarkable decrease in the number of prisoners received after conviction for indictable offences, chiefly larceny, during the last ten years, being no less than 7,209, is a most favourable symptom, for it is crimes of this character, i.e., larcenies and the various acts of dishonesty, which make up about fifteen-sixteenths of the total number of indictable offences, and may be generally regarded as an index to the law-abiding instincts of the community. The causes operating outside, and independently of prisons, in restraint of criminal tendency, especially among the young, are, of course, manifold, and the many alternatives provided by modern legislation for commitment to prison are being made use of by the Courts in a large degree, but the question may be asked whether it is these larger causes alone which explain the gradual diminution of anti-social acts bringing the offender to prison. We believe that some credit may be given, and is justly due, to the efforts of those working at the prisons themselves, of which the reports of governors and chaplains produce such gratifying evidence. The efforts made by the Borstal Committees for the reclamation of the young prisoner under twenty-one; the notable revival of zeal and efficiency in the work of Discharged Prisoners' Aid Societies; the patient work of our chaplains in administering the ordinary regulations; the unwearying efforts of our lady visitors, now an organized body of effective workers at all our prisons; and the lectures and addresses having for their purpose the moral uplifting of men and women who are in many cases led by the impression they receive from so many quarters to change their outlook on life and to hesitate before they revert to crime, which they learn at least to be unprofitable, if they do not abandon it for the pain and misery it causes. The alleviations of the monotony of prison life now permitted, such as lectures, music, and a liberal provision for reading, produce excellent results."

The Commissioners refer with satisfaction to the remarkable diminution in the commitments to prison of young persons under twenty-one years of age, and the falling rate of reconviction in the case of the younger categories of prisoners. With regard to the older prisoners, however, they say that it would be idle to pretend that the statistics of reconviction of men and women sentenced to penal servitude or imprisonment do not furnish proof that the great efforts made to rehabilitate and reform are in many cases ineffectual. With regard to the modern feature of our penal servitude system, the Long Sentence Division, which has been in operation since 1905, and which provides, after a certain term, for a relaxation of discipline for well-conducted convicts, the governors of prisons are unanimously of opinion that it has been a marked success. That convicts, speaking generally, are better behaved than they used to be is shown by the steady decrease of punishments for offences while in prison. The Commissioners announce that the ninth International Penitentiary Congress will be held in London at the Imperial Institute on the 26th of July, 1915, and following days, under the patronage of the King.

Patent Medicines and the Law.

The Select Committee on Patent Medicines have at last issued their report, which states that the existing law is chaotic, and that fresh legislation to regulate the sale of patent medicines is, in the public interest, most urgently required.

They recommend that the law governing the advertisement and sale of patent secret and proprietary medicines and appliances be co-ordinated and combined under the authority of one department of State; that there shall be established a register of manufactures, proprietors, and importers of patent, secret, and proprietary remedies; and that every such person be required to apply for a certificate of registration, and to furnish the address of the responsible manufacturer or representative in this country, and a list of medicine or medicines proposed to be made or imported. It is also proposed that a special court be constituted, with power to permit or prohibit the sale and advertisement of any patent, secret, or proprietary remedy or appliance; that the Local Government Board have power to institute the necessary proceedings to enforce compliance with the law; that in the case of a remedy the sale of which is prohibited the proprietor or manufacturers be entitled to appeal to the High Court; that the department be empowered to require the name and proportion of any poisonous or patent drug to be exhibited upon the label; and that an annual fee be payable in respect of every registration.

Among other things the committee recommend the amendment of the Indecent Advertisement Act, and that the advertisement and sale—except the sale by doctors'

order—of medicines purporting to cure the following diseases be prohibited:—Cancer, consumption, lupus, deafness, diabetes, paralysis, fits, epilepsy, locomotor ataxy, Bright's disease, and rupture without operation or appliance. It is also recommended that it be a breach of the law to change the composition of the remedy without informing the department, that the period of validity of a name as a trade mark for a drug be limited, and that it be a breach of the law to give a false trade description of any remedy, to invite sufferers from any ailment to correspond with the vendor of a remedy, to make use of fictitious testimonials, and to promise to return the money paid if a cure is not effected.

The committee say that no measures of smaller scope will secure the protection of the public.

Correspondence.

STUDENTS AND THE WAR.

To the Editor of the "Medical Journal of Australia."

Sir,—In my Presidential Address to the General Medical Council on November 24th I expressed the opinion that "the need for efficient physicians and surgeons, in the field and at home, is not less urgent than the need for efficient soldiers and sailors," and I said that I had "felt is my duty to press this consideration on senior students, who, though they have nearly completed their curriculum, are ready to forego the prospect of early qualification, and to enrol themselves straightway in the combatant forces."

To-day I have received a letter from Surgeon-General Sir Alfred Keogh, which contains the following passage: "I think with you that the senior student is best fulfilling his duty to the country by getting his degree, and then joining the Army. The need for young qualified men will become great, and I should regret that the supply should be diminished."

As I daily receive letters from senior students and their parents who desire guidance in their choice of apparently conflicting duties, I shall be grateful if you will make known the opinion held at the War Office on the subject.

I am, yours faithfully,

DONALD MACALISTER,

President, G.M.C.

Medical Council Office, 299 Oxford Street, London,
10th December, 1914.

OVARIAN TRANSPLANTATION.

Sir,—I was very much impressed with the account in last week's "Medical Journal of Australia" of the scientific research work which Dr. J. Hodgson Nattrass has done on ovarian transplantation, but I wish to enter a protest against scientific obsession displacing surgical commonsense.

I refer to the case in which he quotes he had done a Cæsarian section, and because of tubercular deformities had decided to sterilize the woman. To do this he transplanted the ovaries instead of resecting the tubes, which is a very simple process, and leaving the ovaries placed where they have been popular for some centuries, in the normal position. This method of surgery reminds me so much of the German pedlar who, in pushing his wares to the housewife, said:—

"I have something here which will kill cockroaches. You catch the cockroach between the thumb and the first finger of the left hand, and drop into his open mouth one tiny drop of this fluid, and the cockroach will die immediately."

"Yes," said the housewife. "But I can kill the cockroach much easier and quicker than that by putting my foot on it."

"Yes," said the German, "that is a good way too."

I think Dr. Nattrass will say that my suggestion of resection of tubes for the sterilization of women is a "good way too." When a surgeon investigates his cases thoroughly, and follows the histories year in and year out, his preconceived ideas of the alleged uses of ovarian secretion becomes completely changed, I may place before my friends, who still maintain that the theory expounded at the moment of ovarian secretion is indisputable, the following statements:—

1. I have systematically called in every case on whom I have done double salpingo-oöphorectomy. Much nearer 70% than 60% of these women who have been habitually accustomed to sexual intercourse have maintained after the operation the fullest sexual desire, and the orgasm is complete.

2. In no cases has any adverse symptom been produced except "flushings," and if the woman is assured that it means nothing, the symptom is soon lost sight of.

3. In none of three cases in which I have done double salpingo-oöphorectomy have I produced a single adverse symptom, except flushings occasionally, and if the woman is assured they mean nothing the flushing is soon forgotten.

4. The first occasion on which transplantation of an ovary was suggested to me was after operation on a single woman for fibro-myomata of uterus. One ovary was adherent far away under the sigmoid mesentery. I could not dislodge it, and tied off its natural vascular supply. I did a subtotal hysterectomy, removing the other ovary. That girl menstruated regularly for six years, and then I lost sight of her.

These are clinical facts that obtrude themselves forcibly before me. Facts that are so frequently recurring that I am heretic enough to say to myself over and over again, "Does the ovary really produce an internal secretion, or does it produce only ova?"

My experience now is that I see less and less necessity for doing anything in the nature of ovarian transplantation, except perhaps in such a case as Dr. J. Dunbar Hooper quoted in the "Australian Medical Journal" some time ago, but such cases are few and far between.

I hope later in the year to read a paper before the society on this subject, so that the fullest discussion may arise.

Yours, etc.,

A. NORMAN McARTHUR, M.B., B.S., M.R.C.S., L.R.C.P.,
Senior Gynœcological Surgeon to In-patients
St. Vincent's Hospital, Melbourne.

74 Collins Street, Melbourne.
January 19, 1915.

"AN OBSCURE EPIDEMIC."

Sir,—In your issue of December 26, 1914, I noticed a paragraph headed "An Obscure Epidemic." Would you kindly permit me to make a remark or two on the subject? This epidemic also made its appearance in Port Augusta and surrounding districts about the beginning of November, 1914. It began with an attach of diarrhœa, which lasted for varying periods. This was followed by abdominal cramps of an extremely severe character, and succeeded in turn by vomiting, usually violent. The majority of the patients recovered in a day or two after the hypodermic injection of a large dose of morphine. It left no ill effects, though in other cases the pains persisted for a week or two.

I think the trouble was microbic in origin, but cannot believe that the water supply had anything to do with it, as some of the patients, who lived as far as 40 miles away, drank their own rain water only and not the town supply. Permit me then to suggest that it was an air-borne infection, on the bacteriology of which I can throw no light.

Yours, etc.,

HORACE E. DUNSTONE, M.B., B.S. (Adel.).

Port Augusta, S.A., January 17, 1915.

Personal.

Dr. H. C. C. Shaw has resumed practice at Wickham Terrace, Brisbane, Queensland.

Dr. J. S. Macfarlane has succeeded to the practice of Dr. J. G. W. Hill, of Gundagai, New South Wales.

Dr. J. Goodwin Hill has taken over the practice of his late brother Dr. D. B. Hill, at Nowra, New South Wales.

Dr. McKibbin, of Hastings, and Dr. Orchard, of Christchurch, are on a holiday visit to Auckland, New Zealand.

Dr. Smyth-Yule, of Queen's Park, Western Australia, has been appointed Medical Officer at Broome, in the North Western district of the State. He was entertained by the First Aid and Ambulance Class on January 8, and received as an appreciation from the residents, a handsome presentation. He has handed over his practice to Dr. L. E. S. Gellé, a graduate of the Durham University, after holding some house appointments in the old country, spent a short time in South Africa.

Dr. Hilda Northcroft, of Staffordshire, has been paying a visit to her relatives in the Waikato, New Zealand. She proposes to spend a few months in Raratonga before returning to England, via America.

Dr. John McVittie has commenced practice at 41 East Esplanade, Manly.

Dr. J. T. W. Wilkin, of Devonport, Auckland, New Zealand, has met with a severe accident. On travelling in his motor to a patient, he had to pass through a fire swept area. A burning limb of a tree fell as he was passing, and caused an injury to his head. The car caught fire, and was completely destroyed. Dr. Wilkin was rescued in an unconscious condition.

Dr. A. A. Martin, of Palmerston North, New Zealand, has been mentioned in the despatches for gallant service to the wounded under fire. Dr. Martin served in the Boer War.

We regret to announce the death of Mrs. B. James, the widow of Dr. W. J. James, of Waratah and Newcastle, at an advanced age. She had been living in Glebe Point, Sydney, for some years.

The death has been announced of Dr. Robert E. Rygate, of Grenfell, second son of the late Dr. Robert Rygate, of Wellington, New South Wales.

Dr. E. H. Fyffe has resumed practice at "Lendon," Gore Street, Fitzroy, Victoria.

Dr. S. A. Ewing has resumed practice at 33 Collins Street, Melbourne.

Medical Appointments.

Dr. J. G. Edwards has been appointed Acting-Inspector Medical Officer of emigrants' ships.

Dr. F. C. S. Shaw has been appointed Deputy-Licensing Magistrate of the Wyalong Licensing district, New South Wales.

Dr. N. Dowling has been appointed Government Medical Officer at Young, New South Wales.

Dr. J. T. Anderson has been appointed Acting Inspector-General of the Insane during the absence of Dr. Montgomery.

Dr. E. Paget Thurston has been appointed Acting District Medical Officer and Public Vaccinator at Coolgardie, during the absence of Dr. Mitchell.

Dr. Stanley E. Brown has been appointed Medical Superintendent to the Southland Hospital, New Zealand.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenems sought, etc., see "Advertiser," page xi

Stannary Hills Hospital, Medical Officer.
Thargomindah Hospital, Medical Officer.

Diary for the Month.

Feb. 1.—Federal Committee B.M.A. (Melbourne), Fifth Session.
Feb. 3.—Victorian Branch B.M.A., Monthly Meeting.
Feb. 3.—Central Western Medical Association, N.S.W., Annual General Meeting at Parramatta.
Feb. 5.—Queensland Branch B.M.A., Monthly Meeting.
Feb. 9.—Tasmanian Branch B.M.A., Annual General and Council Meetings.
Feb. 10.—Melbourne Pediatric Society.
Feb. 11.—Victorian Branch B.M.A., Council Meeting.
Feb. 17.—Victorian Branch B.M.A., Clinical Meeting.
Feb. 19.—Queensland Branch B.M.A., Council Meeting.
Feb. 23.—Victorian Branch B.M.A., Eye and Ear Section.
Feb. 24.—Victorian Branch B.M.A., Council Meeting.
Feb. 26.—Melbourne Hospital Clinical Society.

The attention of members of the New South Wales Branch is directed to the importance of attending the meeting to be held on Friday, January 29, 1915, at which two matters of interest to the profession will be discussed. The first concerns the recognition of the Australian Natives' Association of New South Wales as a Friendly Society, and the second has to do with the principle of giving medical treatment in clinics for venereal diseases to those able to pay for this treatment. Both these subjects affect the general practitioner and specialist alike, and the weight of the decision arrived at will depend to a great extent on the number of members who help to formulate the policy.

Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach. F.S. Lodges at Warwick.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A.
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Australian Natives Association. Balmain United F.S. Dispensary. Burwood District F.S. Institute. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows Med. Inst., Elizabeth Street, Sydney. N.S.W. Ambulance Association and Transport Brigade. N. Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Braidwood. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, and Auburn. F.S. Lodges at Wellington. Killingworth Colliery, Newcastle. Seaham Colliery No. 1, Newcastle. Seaham Colliery No. 2, Newcastle. West Wallsend Colliery, Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to the "Medical Journal of Australia" alone, unless the contrary be stated.

All communications should be addressed to "The Editor," "Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.